

Dreamarks

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MAGAZINE

Discordance Between Human and Earth



How to Foresee
& Foresight



The Adverse
Outcomes of
Frontier
Technologies

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Dreamarks Magazine

About Dreamarks

Gina Al ilmi

Sole Writer, Books Author, Conceptor
Graphic & Web Designer.
Founder & Director of Dreamarks

Bogor, West Java Indonesia

www.dreamarks.com

gina.al.ilmi@gmail.com

<https://www.linkedin.com/in/ginaalilmi/>

Revitalize the Earth by Rectifying Our Habits

Leaders are the team that will handle all the matters at the corporations and facing everyone in the public and laws matters for any crisis, issues, disputes, sues, and almost anything that happening around many matters of the corporations. That's why every leaders must master the arts of Foresight to prevent any negativity from happening to the corporations or organizations.

The renowned Danish planning expert Bent Flyvbjerg, now at Oxford University, offered a forceful summary: "The prevalent tendency to underweight or ignore distributional information is perhaps the major source of error in forecasting. Planners should therefore make every effort to frame the forecasting problem so as to facilitate utilizing all the distributional information that is available".

This may be considered the single most important piece of advice regarding how to increase accuracy in forecasting through improved methods. Using such distributional information from other ventures similar to that being forecasted is called taking an "outside view" and is the cure to the planning fallacy. (Flyvbjerg in Kahneman, 2011).

7 billions of earth inhabitants, is a great achievement. In our probable future, there can be failure at global government that can makes global pandemic happening again. For now, we have conquered Covids, and along the ways, we've setting up global systems for the world and all global citizens towards anything close to it.

In order to prolongth the healthy oxygen supply in the Planet Earth, we must do many kinds of diets. From AI diets to Electricity diets, to make sure we'll go hand in hand with the global government in handling global energy crisis and global famine.

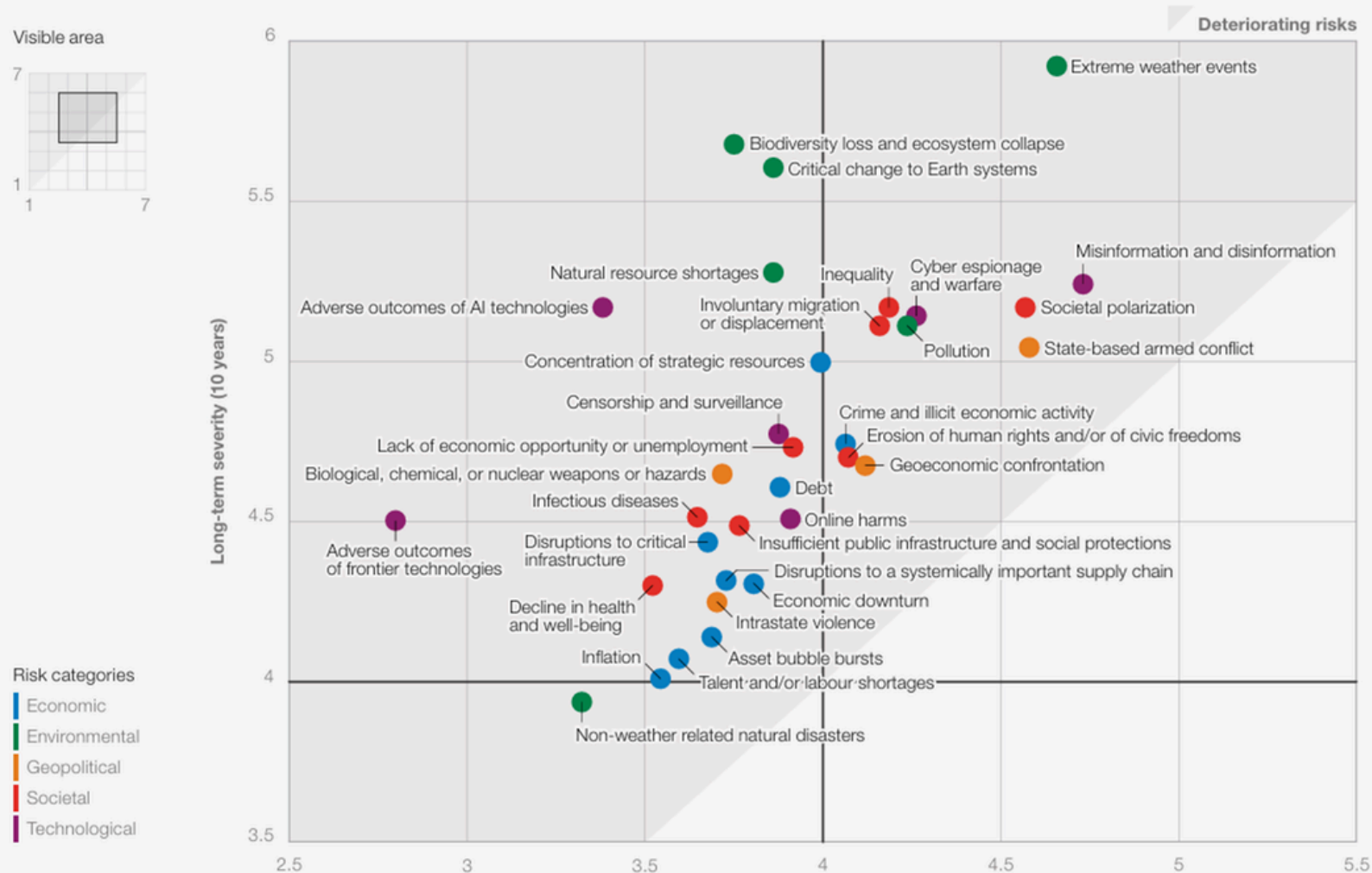
AI Diets is something that we have to started and maintain as daily habits. We can think of it further as our brain defences, a learning habits to prevent us from using AI help in our works, and to make sure we're not putting an end to many fields of science and human capital development knowledge by letting AI dictate and govern us.

Meanwhile, The World Economy Forum and World Energy Council has made many useful guidance that we can learn and adopt in our Planning & Development on Future Global Strategy. Several of the source is from the book; "Thinking; Fast & Slow", by Daniel Kahneman, Winner of Nobel Prize in Economy.

We also have to see the Leadership role in this Future Scenarios planning and preparing our best candidates as future Leaders. Leadership Scarcity is one of today's nations problems. But all of it can still be handled if we create and conduct the right scenarios, making sure that the company strategic development are giving vast opportunity and giving everyone a fair chances as Future Leaders. In this way, we can maintain healthy cooperations inside our companies or organizations.

Gina Al Ilmi

Editor-in-Chief



Global Risk Reports 2025

On the technology side, The Global Risks Reports 2025 are viewing that might be chances of Adverse result concerning the AI demand growth. Also the same for frontier technologies development, because of the dependency to AI.

The World Economic Forum Global Risks Reports also put the Lack of economic opportunity or unemployment near to technological censorship and surveillance. This might be because many employer or importer has no insight for seeing their future partner companies before the cooperations signed, thus because of the lack of chances to detect and monitoring, unlike in other countries that gives many windows opens for the future counterparts.

The WEF also concerns about economic downturn that can happened when there were disruptions happens to a systematically important supply chain. Especially if there were intrastate violence, and inflation, then what will happens is there will be asset bubble burts, and talent or labour shortages. while at the lowest point of risks is the non weather related natural disasters.

While almost on the high end there were cyber espionage and cyber warfare risks that are related to inequality, industry migration, industry displacement, polution, societal polarization, state based armed conflict, and technological misinformation and disinformation.

The Risks that was at the peak are environmental focus, such as extreme weather events, biodiversity loss, ecosystem collapse, and the critical change on the earth systems (global leadership change). While goeconomic confrontation risks are also linked to the risks of errosion of human right and civic freedom, and also there can be crime and illicit economy activity.



Maintaining Peaceful Cooperations of Global Populations

When we thinking about the world, we have to think about the continuation of people who will work, build and run this planet earth, together. But somehow we sees how the westerner are avoding to have children, and always thinking that children is expensive, and children are big burden for the populations.

This is not the way to maintain the world to stay in peaceful cooperations. We can see the content of the internet are growing day to day, but have we makes our childrean learn and benefit from it? Or we just let them being consume by the content that are fullfilling their needs of music and various colours?

The content of the internet are now aiming at juxtaposing our emotions by activating the trigger to various hormones in the brain by thrilling contents, by the ghostly stories behind it, and these kinds of contents are addicting to consume day to day. Making our children in dire needs of evreyday adrenaline spikes from it. The result? emerging Cortisol Attacks; making our children feel exhausted, tired, and bored, if they not online doing gaming.

What we supposed to done is taking our children to play outside, meeting new people, so they can learn about their societies and also can learn a lot about the nature, the vegetables, the fruits, and many kinds of nature harvest that is close to our lives.

If we care a lot about our family, we hope other people in the world are too. Not only having

FIGURE 2.3

Global risks over the long term (10 years), by region



Regional Risks based on Global Risks Reports 2025

As we can see on the diagram above, extreme weather events are the highest risks at the Southern and Eastern Asia, European countries, Northern America and Sub Saharan Africa. There's many of the risks at all the regions that are Environmental risks. This means that there's discordance between the human and earth, making the environment at high risks.

The number two of the Regional Risks are at the Technological domain. Many people at Southern Asia were concerns about the misinformation and disinformation; and also concerns about the adverse outcomes of the AI Technologies.

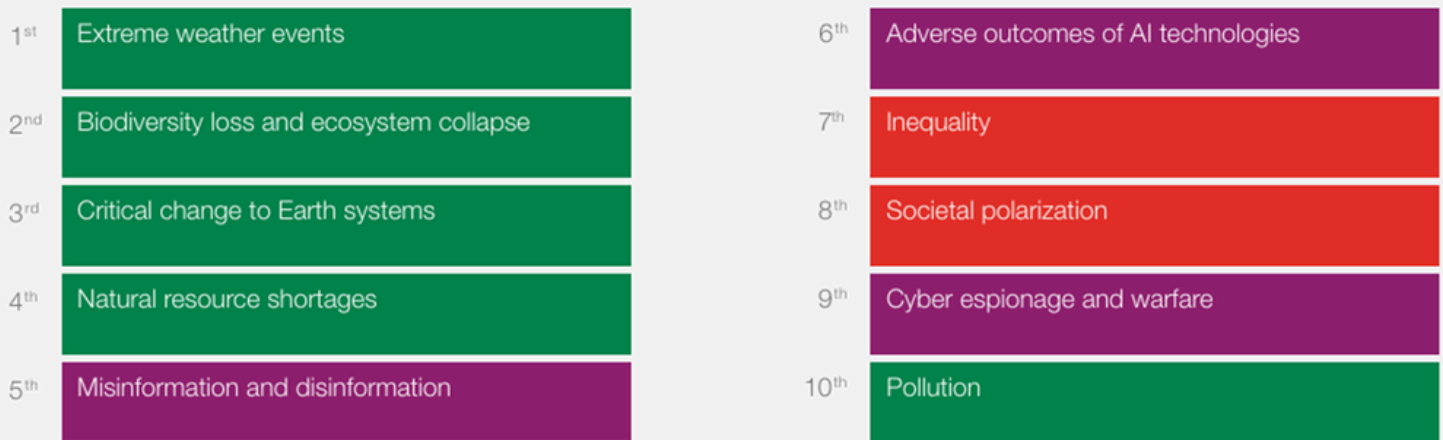
While the Middle East and Northern Africa are concerns about the Cyber Espionage and Warfare that has been happened for so long, and The Adverse outcomes from the AI Technologies, such as sudden insurgence in electricity demand, for data center, whilst the effort to balance the demand and build more power house, not happening overnight, and taking long turn in the diplomatics and bureaucratic process.

In the Europe, what worry most is the number of the citizens that doing involuntary migrations and these migrations had a large effect on the work force, national defense, and overall politics of the government in the Europe.

While in the Latin America and the Caribbean, the above all one to the fifth priorities of the regional risks all are environmental issues. And in the Sub Saharan Africa, the most worrying problems is the lack of economic opportunity, bio diversity loss and environment collapse, crime and illicit economic activity, and the natural resource shortages. What makes us more concern about the discordance of human and earth is these risks projections can take place until 10 more years or more, in the Earth history records. If we have any initiatives, all can be done and even the Saharan can turn green with the help of the Great Green Wall funded by the African Union and from the help from all over the world.

Global risks over the long term (10 years), ranked by severity

"Please estimate the likely impact (severity) of the following risks over a 10-year period."



Risk categories

Economic

Environmental

Geopolitical

Societal

Technological

Global Risk List of Severity

The Global Risks data when viewed overall based on severity, have devastating vast impact to human health, safety and can have regional impacts. Number 1 is the effect of extreme weather events that already had happened such as Katrina Storm, Aceh Tsunami, Turkey Earthquake, , and many other earth calamities that has happened and has impact on several fatalities number of people died.

Pacific Ocean's plastics waste, Spanish Flood, West Java landslide, Europe mountain avalance, are amongst the most devastated disaster that frequently happens, amid the facts that there's should be early extreme weather warning at each cities when the calamity frequently happened. These types of disaster are include in biodiversity loss and ecosystem collapse.

Because of the vast amount of Green House Gases, this planet has come to the phase of Critical Change to Earth System. Almost everyone in the planet are aware of this. The industry sectors are also doing many innovation in creating machineries with almost zero emission, and with the help of AI, scientist now has analyzed and detecting the needed change in the machineries to make it more energy efficient.

Natural Resource Shortage has also happens and creating high production spending in almost every factory. With the help of AI, the machine efficiency systems has also being improved and many of the improvement are also being scientifically analyzed to make sure that the new innovations can maintain the same level of production with decreasing the cost.

In the technology field, we also have to be more careful in facing the content in the internet and the AI results, because of the large cavity of misinformation and disinformation.



Source

World Economic Forum Global Risks Perception Survey 2005-2006 to 2024-2025.

Note

Average risk severity and fluctuation over a 20-year period, based on the list of global risks in the *Global Risks Report 2025*. The x-axis represents the standard deviation of risk severity rankings, indicating volatility in risk perception. The y-axis denotes the average severity ranking, where higher values reflect more critical risks. Dot size corresponds to the frequency of a risk's appearance across the last twenty editions of the *Global Risks Report*. Online harms was not included in Figure 2.17 due to being a new risk introduced in the *Global Risks Report* in 2025.

Global Risks Perception Survey Reports

From The World Economic Forum Global Risk Perception Survey 2005-2006 to 2024-2025, Here we can see how the AI adversity is giving very high risks for global empowerment. Many people are being quit from their jobs because their expertise are now replaceable by AI advancement.

Also the AI electrical needs are also very risky because of the high needs of electrical power in each of the Data Center that are maintaining the working big data work house as the brain of the artificial intelligence, thus giving high risks to the environmental longevity equilibrium. Also risking to global geoeconomic confrontation and the assest bubble bursts.

While on the Societal side, The Inequality Factors always been at high risks, and because of the inequality remain unsolved, makes it only moving at very low fluctuations at the charts, and makes it remain high risks, and endangering the main societal systems.

The same also as the lack of opportunity and unemployment, that can be related to the intrastate violence, and the state based armed conflict that can happened to any countries or societal systems. This also applied to the Erosion of human rights issues, which has the least risks among many societal factors, and remain above zero risks, at the same level with the infectious disease factors.



Current Global Risks Conflicts

State based armed conflicts, such as what currently happening at Palestine and Ukraine, has become very severe and creating the most major destruction in the 21st century. Hundred thousand of people has been killed, and half of them are children and women.

How could this scale of devastating conflict can remain for almost two years now, and looks that many global leadership becoming crippled to handle this conflict and the global leadership systems have been very quiet and many seen as numbness of humanity.

Many of them seems unalarmed and doesnt realize that their positions and title has given them the amount of power to move together to creating international decree to stop the war.

The global leadership seems unalarmed that abiding one large conflict like this can have an impact on the geo economic confrontation. The conflicts becoming more severe because of the misinformation and the disinformation. Thus creating Economic Downturn at the state scale of the conflict countries, and creating ripple wave at the Global Societal Polarization and creating the vivid dreams of new global leadership systems, which are endangering the social situations at the related interstates, and also to the world leaders who hasnt being of help to the large conflicts that are still currently happening and making the Palestinian lives at high risks.

The global citizen thus then being more aware of this Earth-scale Erosion of Human Rights and Civic Freedoms. Especially the kind of societal issues that are based on Inequality. And making many young citizen thus choose to move abroad and leaving their countries,

The barometer rests on five pillars of global cooperation



Trade and capital

Promote global **development** and **resilience**

Focus of analysis is on 1) development and resilient outcomes; through 2) presence of global economic flows that promote likely opportunities for these outcomes



Innovation and technology

Accelerate **innovation** and **beneficial technological progress**

Focus of analysis is on 1) global progress in innovation and technology; through 2) presence of the global sharing of underlying knowledge that contributes to these outcomes by fostering collaboration across global talent



Climate and natural capital

Support the **resolution of climate** and **natural capital challenges**

Focus of analysis is on 1) lowering of emissions, preservation of natural capital, and preparedness for likely impact of climate change; through, 2) shared global goals/commitments that increase humanity's ability to limit and adapt to the dynamics of a changing climate



Health and wellness

Enable global population to lead **longer and better lives**

Focus of analysis is on 1) impact of the burden of disease on duration and quality of life; through 2) commitment to global public health standards and collaboration through flows of goods, R&D/IP and health financing



Peace and security

Prevent and resolve **conflicts**

Focus of analysis is on 1) prevention of death and long-term negative implications of conflict; through, 2) commitment to multilateral peacekeeping operations and international stabilization efforts

The Five Pillars of Global Cooperations

All of the interstate conflicts, economic downturn, technological advancement adversity risks, should be globally governed by setting the global rules, and also setting the lists of tolerable global barriers of economic and political conducts and focusing more on the equality and equilibrium of the international cooperations.

By creating new global human rights laws & political barriers as rules not only can promote many nations that are still developing, but the overall global economy can also impacted with the new grows in the economic.

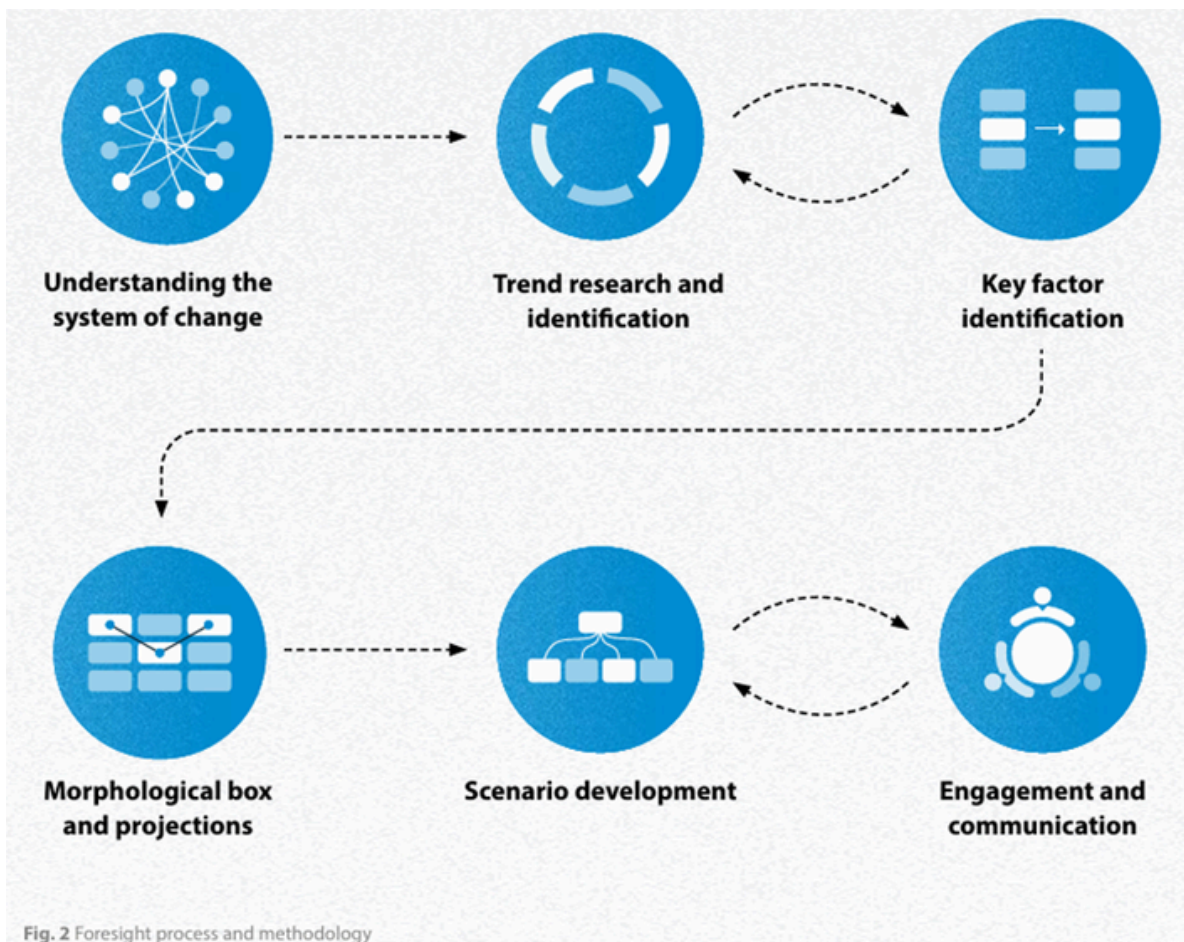
That the economic resilience at the global scale should be entail from the increasing of each countries GDPs by creating global rules that can largely developing global trade and capital, with the hope that every listed global economic laws that will be made, can be made more future oriented, vastly educated and more laws making more humanized, and setting every citizen lives counted as economic capital, and not as an economic burden.

As to be more precise, the global economy should be controlled by the human rights experts viewers, and every lives should be measured with the same chances and opportunity in every countries.

Every academic can gives their contributions in viewing in the why and the how to's of the inequality happening in every nations, to creates more open communications channels, and making the science not as something that should be treated as silo, but as freely contributed.

, This steps are important to helping each government in many parts of the worlds to grew more sharing of powers to creating economic equality, spreading their human resource capital and natural capital.

Therefore the imaginable results is as the big countries to gives their percentage of power shares to be contributed globally, and with the power scale that can help many developing nations and emerging economic regions. One example are already created by the monetary and economic global systems, but what the world still sees as burden is there havent developed at best, and making every United Nations results seems to lack of power because of the VETO power.



Global Leadership Foresight Process & Methodology

Maintaining healthy corporations has to be started since several years ago. What had happened and should happened today, has to be because we have anticipated this periods or phases, beforehand. But its okay, all of us are not late if the company still exist and the corporations is still operating.

For now, all possible conditions has to calculated by involving every dimension that are around your planning & development scopes. Make a list of of cause and effects that revolving around everything in every dimensions that you are guarding. Make a list of risk and effects on every cause and effects.

How to do this? First, Draw **an overlapping curves of the dimensions themes** that you see are related or in accordance with the current conditions. Then, in other piece of paper, make a list of the **related systems**. Whatever evolving around the dimensions is making the cause and effects in your corporations, there for, it should be systematized. To prevent the outburst of be many losses that will be out of reach. What you are making here is the internal overview of the current internal systems that can be change and made to be more in accordance to the goals that you are aiming right now.

By calculating the effects of many causalities that have major effects whether to company reputations or to the calculated operations, or to the reported everyday increase of incomes, and on the company status at the Balance Score Cards. Calculate everything, and see the predictable calculation that will emerge, from the monitored causalities to every differentiated systems that are in your corporations meta cognitive maps.

Foresight Process & Methodology

From WHO 2022, Foresight is different from a prediction or forecasting of the future. It presents a new approach for better preparedness. It is forward looking, action-oriented and fosters collective ownership of the future. This initiative aims to achieve a two-fold goal.

Firstly, to ensure that we are collectively better prepared to tackle future epidemics and pandemics by bringing key players together.

Secondly, to support informed decision-making for leaders on the transition from emergency response to future preparedness.

The method Central to the foresight initiative is the development of scenarios. Scenarios are hypothetical, yet plausible, illustrations of the future.

They are an invitation to conversations; a way of “thinking the unthinkable”. They are a tool for framing imagination, aiding decision-making, identifying recommendations, testing, and refining strategy and policy options.

Make your planning and development team to try to think like smeagole who is a paranoid person guarding his precious ring. What he's guarding is the chances of a person that can do changing role because of the invisibility capabilities make a person undetectable, unmonitorable. That anyone who is using the ring can be invisible. Make sure that in your planning and development **system of change** (SoC), you have everything and everyone are seen and can be monitored. What is management without monitoring, guiding and leading?

How to make everything in your Systems of Change be able to be monitored? First, create a comprehensive corporate report systems where everyone can reporting anyone in your corporations. Run this report systems, and be careful to not over judge anything. In every reports, make sure your company human resource systems are involved to master this problems, and to run through the precocious efforts of employee turnover prevention management, so there will be no dispute or crisis happening.

Seconds, you have to set regular overview of every person doing anything in her or his computer in your company, especially if they can access the company internal data and the company basic real time data. This is important for you to prevent any fraudulances schemes from being happening or being created.

And always monitors if your employees are went outside on office time to meet competitors. This kind of meets with the competitors are dangerous and opening their capability to disengage with your corporations. Makes every supervisor handle this daily overview. Don't forget to double the guards by making your managers also monitors your supervisor. Write along the lists of observable behaviors that can be click, so your supervisor and managers dont have to write long sentences.

Your corporate office or organizations can have free style and free hours of works, but still be able to monitor these. Just make sure to make the form of the computer system able to detect and monitoring many things. Try to make this **Risks Overview Systems (ROS)**, clear in the **Corporate Management Systems (CMS)** time when the system is operated, and being signed as **Corporate Secrecy Agreement (CSA)** Or in the **Non Disclosure Agreement (NDA)** to everyone that joining your company, and to be signed to all your current employees to make sure about they are conforming to the company rules.

Figure I-2 ■ The Three Dimensions Defining a Megatrend



Detecting Mega Trends for Future Foresight

Leaders are the team that will handle all the matters at the corporations and facing everyone in the public and laws matters for any crisis, issues, disputes, sues, and almost anything that happening around many matters of the corporations. That's why every leaders must master the arts of Foresight to prevent any negativity happening to the corporations.

From the American Management Association, we can read their books about the Six Mega Trends, Leadership 2030. We can see below here, there are 3 dimensions defining a Mega Trends. First that the time dimensions; that The trends should be observable over decades, can be projected with a high degree of probability to at least 15 years into the future.

That the dimension of Reaches, we can see that the Trend will be affecting all regions, and all conditions to the stakeholders, including governments, individuals and businesses. At the Impact dimensions, the trend can fundamentally transform policies, society and the economy.

Figure I-1 ■ The Leadership 2030 Research Process

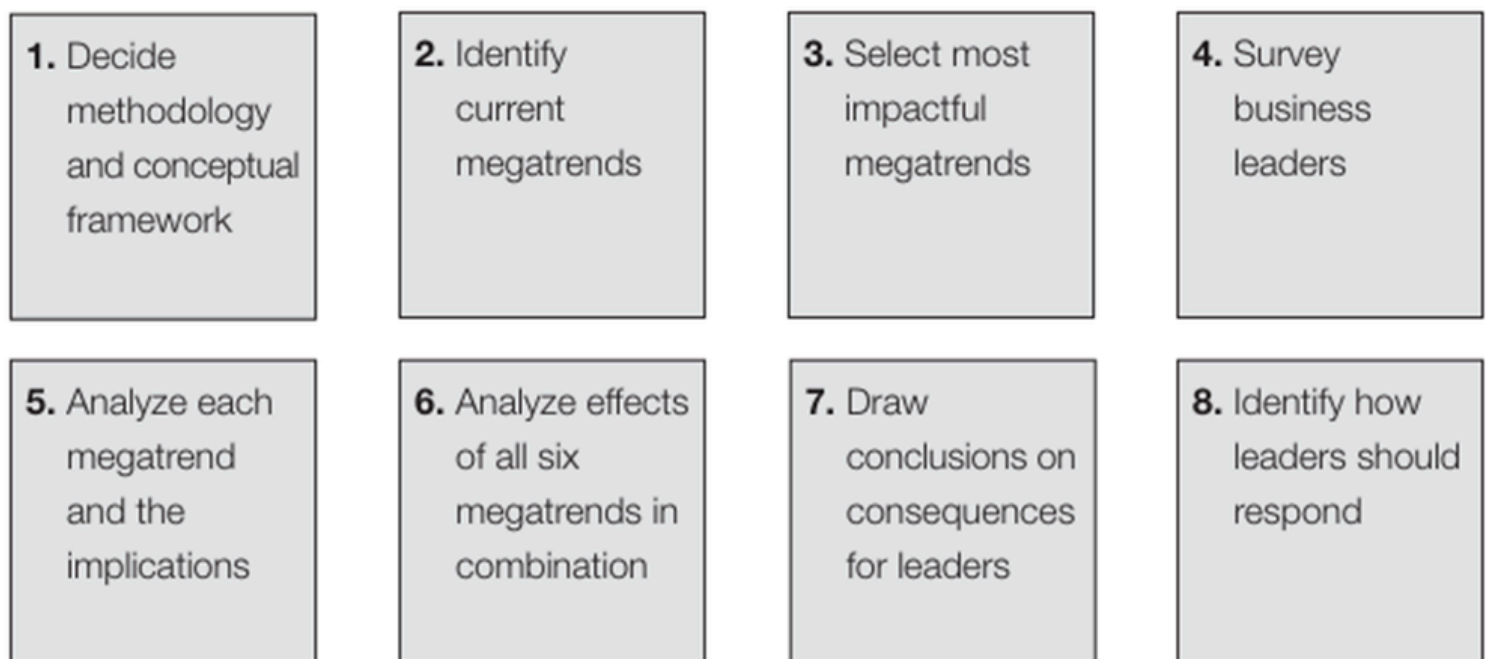
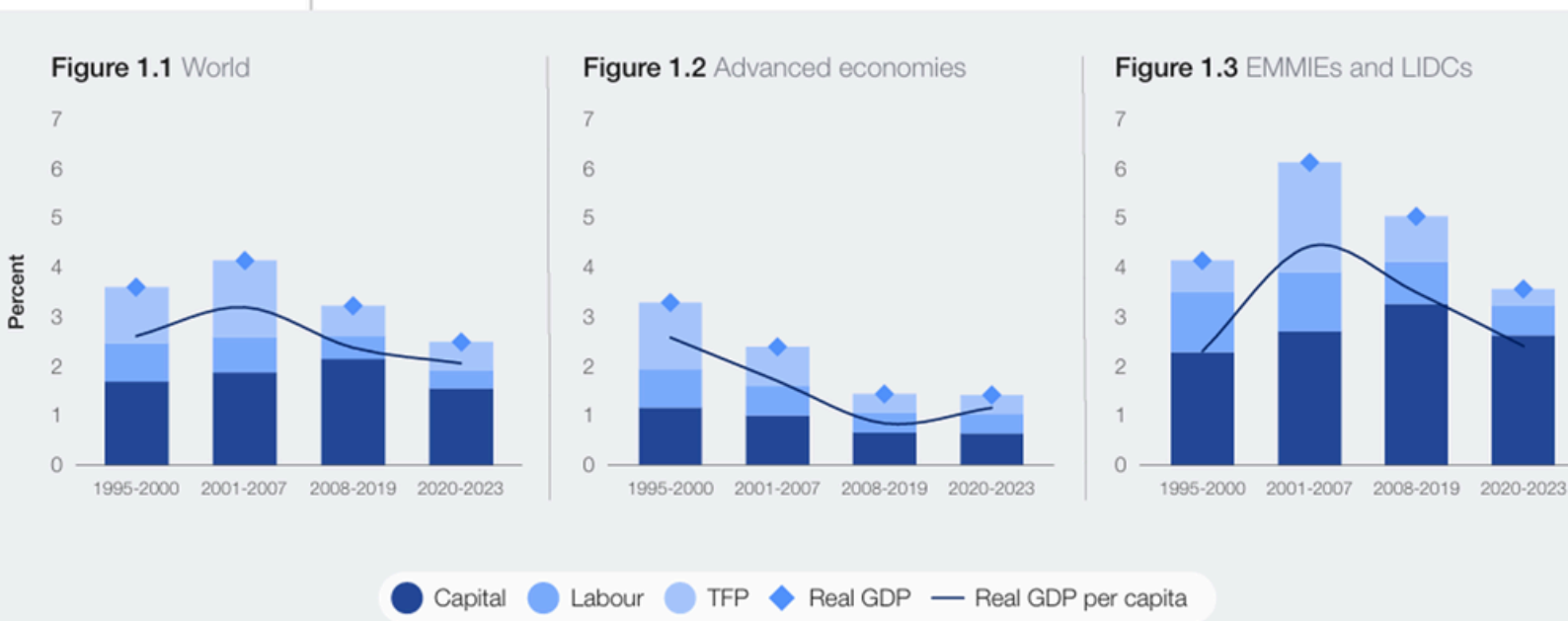


FIGURE 1 | Contribution of components of GDP Growth, 1995-2023



Note: Growth decomposition sample comprises 140 countries. Contributions of capital growth and labour growth reflect output share of respective factor inputs and the growth rates; EMMIEs = emerging market and middle-income economies; LIDCs = low-income developing countries, TFP = total factor productivity.

Source: World Economic Forum and Accenture based on International Monetary Fund, April 2024.

How The Economy 1995-2023

From the charts above, we can see that the Emerging Economy countries, and the Developing Countries are giving more contributions to the world economy. While the advanced economy are giving smaller contributions, and its contributions are decreasing and more decreasing at every five years of statistical evaluations.

We also saw how Total Factor Productivity (TFP) are largely contributed to The World Economy, with percentage that are almost as much as the Capital. After 2008, The Labour Factor always increasing. In the Advanced Economy, The Labour Factor shows decreasing proportions, with Capital Factor that also decreasing.

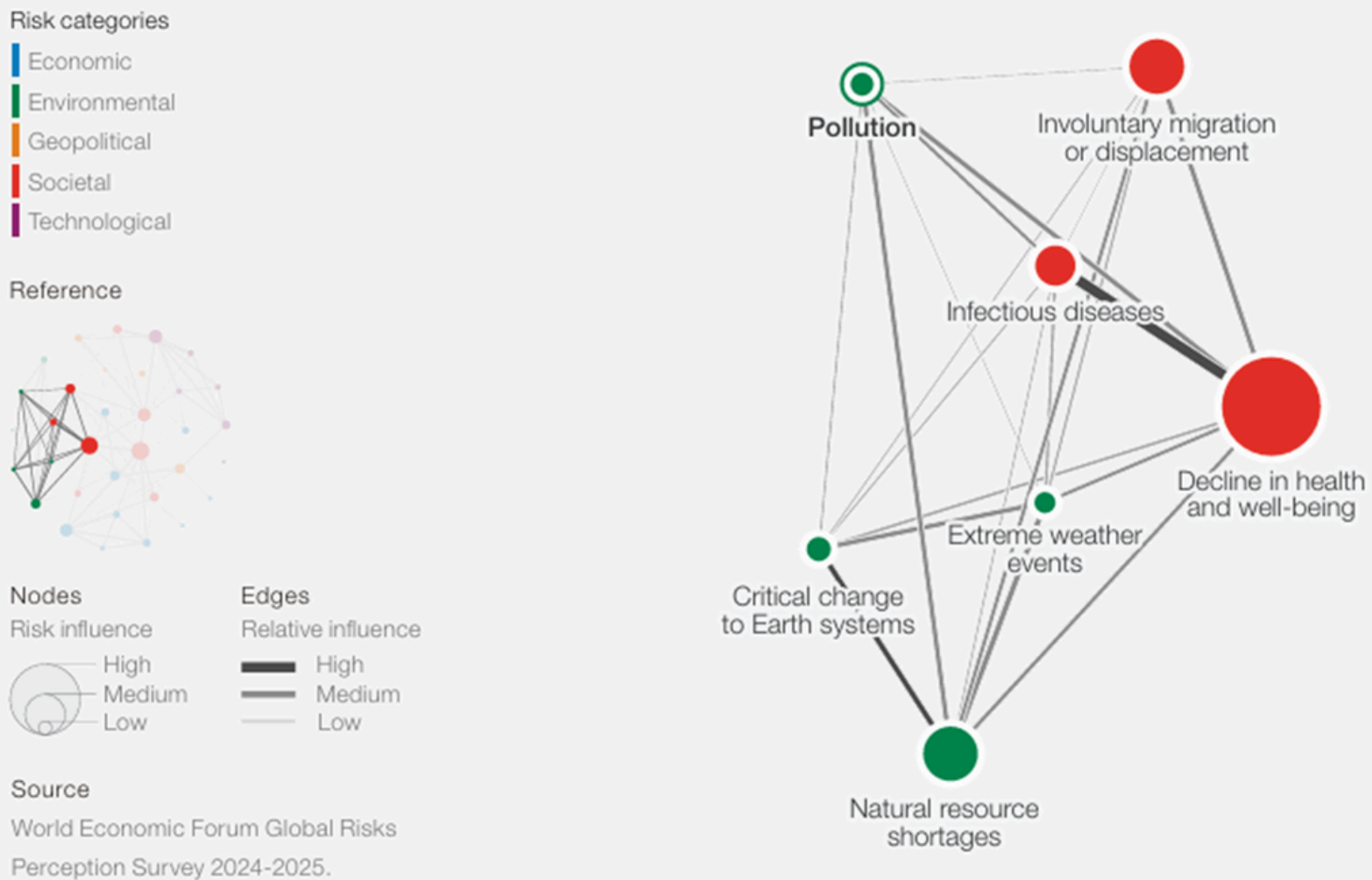
At the years 2001-2007, The Emerging Economy & Developing Countries showing high increase because of the Large Capital Factor, And this Capital factor becoming more increasing at 2008-2019. From our perspective, this phenomenon was happening because of the Advance Economic Country are giving large Investment to The Emerging Countries and the Developing Economic Countries, to make the world economy more equal.

This great amount of Investment is the main collateral that are used by the Emerging Economic Countries and the Developing Economic Countries to open many fields of jobs. Making the Less powered economic countries to have higher life quality baseline and making the less fortunate countries to become more stronger, by also giving the needed educations, health supports, and human development

In the end, the Emerging Economic Countries and the Developing Economic Countries then gives back to the Advance Economic Country through Exporting and Importing the needed materials and energy, and contributing life supports for all the human in this planet, creating balance and more healthy economic accordance's between human and the whole planet earth.

FIGURE 2.6

Global risk interconnections: Pollution



Maintaining The Health & Nature Accordances

Guarding the Health of our environment, will gives us more time and chances to maintain our own health. Why is this so? Because, so many of natural resources in this earth are not naturally preserves, making the environmental risks become very high, and increasing the risks of new diseases outbreak, whether its pandemic or endemic.

If there's extreme wheather events happened, the situation will be more critical. Many lives are at stake, and the contageous diseases can emerge without any warning. Before this happens, it is very important for us to do the various steps for guarding our environments longevity.

The steps that will help the accordances of our planet earth, are typically easy and simple to do. Such as, planting more trees, cleaning our environment near our home, doing the recycle efforts to make many natural source likes trees for creating papers, and oils for creating plastics and rare earth minerals for technology advancements, still preserved at abundant levels.

One more thing, to keep the earth animals and vegetations still abundant and to avoid many species become scarce, we have to preserve and guards our environment by avoiding rare species hunting, treating forest like a natural museums, and not allowing animal hunters and rare vegetations and trees hunters from entering the guarded forests.

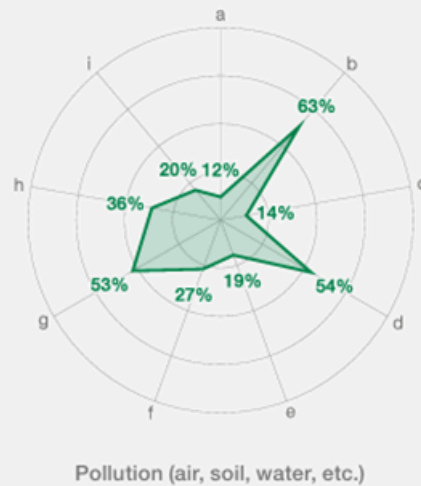
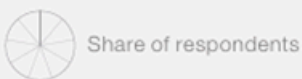
FIGURE 2.8

Risk Governance: Pollution

"Which approach(es) do you expect to have the most potential for driving action on risk reduction and preparedness over the next 10 years? Select up to three for each risk."

Approach

- a. Financial instruments
- b. National and local regulations
- c. Multilateral treaties and agreements
- d. Global treaties and agreements
- e. Development assistance
- f. Corporate strategies
- g. Research & development
- h. Public awareness and education
- i. Multistakeholder engagement

**Source**

World Economic Forum Global Risks Perception Survey
2024-2025.

Risk categories

Economic

Environmental

Geopolitical

Societal

Technological

How Each Global Elements Interface Pollutions Risks

Whatever global campaign we are addressing, if the local and national government doesn't follow it by creating the right public policies, every steps to save the earth will be very difficult to do. The steps to prevent pollutions risks should starts from creating the right laws, the right public policy, and to have the national and local government treating the nature the same as guarding a museum filled with high prices treasures.

Creating the proper law to guard the nature with Rectifying The Global Treaties and Agreements are also a high priority to be solved by our global leaders around the world. The head of the UN, The head of the African Union, The people in India, Indonesia, Malaysia, and ASEAN Nations and any other countries that still have abundant natural resources, and abundant rare animal species and vegetations species.

More than just words, more than just books of sentences. We have to uphold and obeying the laws and policies. We also have to make sure all the other citizen in our country and at the other the place where Natural Preservation to follow and uphold the Laws and Policies that have been made.

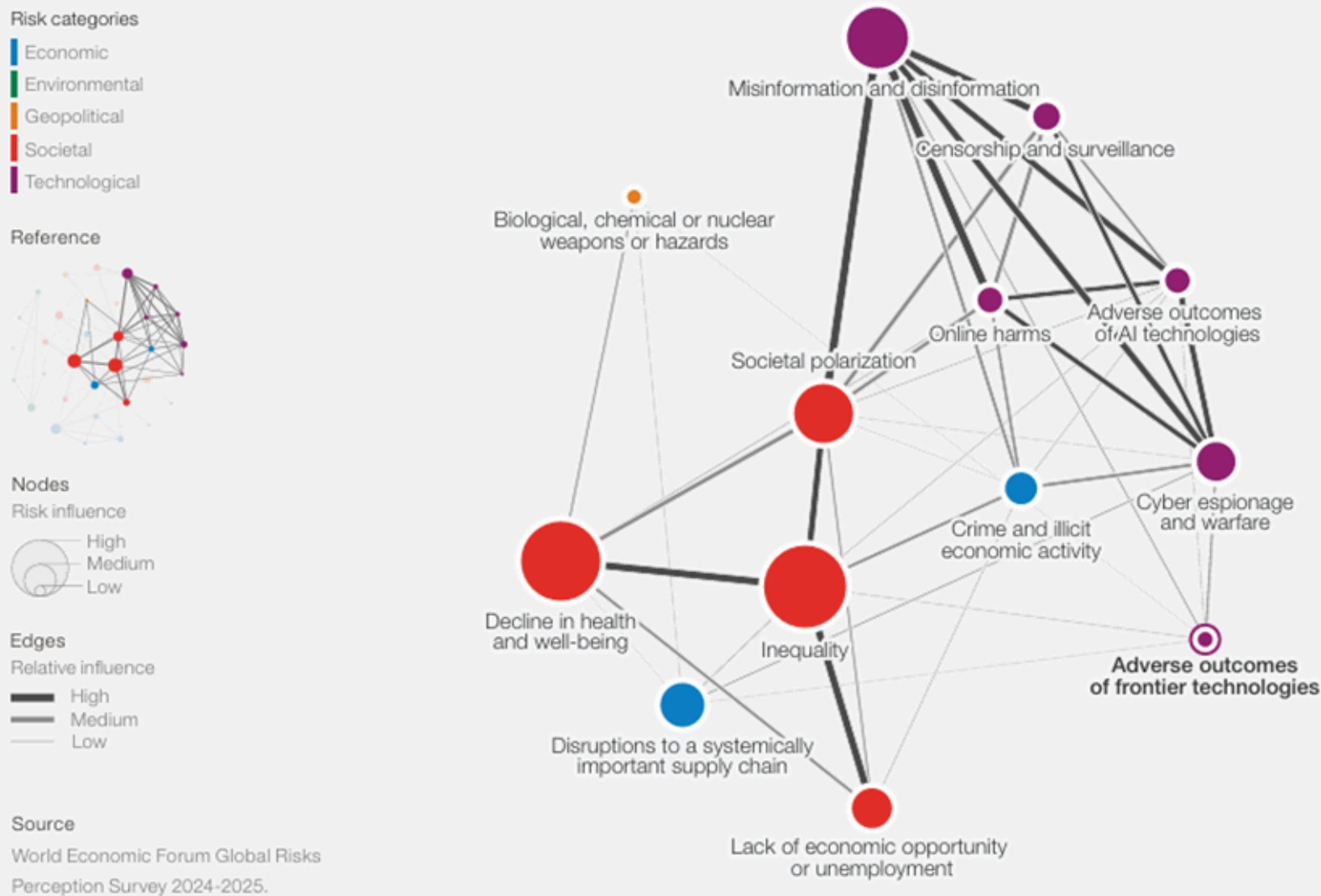
To make sure that the industry we have doesn't gives more pollutions that can create the green house gases, Every nations and local government also have to rectify the laws and policies for preserving the nature from pollutions risks.

We also have to create public awareness, based on research and development that must be done to gives real proofs and real data about the dangerous pollutions in air, water and soil that is currently happening.

If the local, nations, and regional government are discipline in guarding the natural entities in this planet earth, we can keep the longevity of many rare animal and vegetative species. The people power can guard the laws and policies to be uphold, in exchange to still have The Healthy Soil in our garden, forests, and farms, The Healthy Water in our lakes, rivers, oceans, and The Healthy Air in our cities, suburban areas, and at the towns and villages.

FIGURE 2.11

Risk interconnections: Adverse outcomes of frontier technologies



Adverse Outcomes of Frontier Technologies

Research is the gateway to developments. On every field of sciences, industries, and technologies, scientist and academician are inventing many things in more faster speeds than 10 years ago.

Thanks to the Development of Artificial Intelligence, Big Data Managements, and the that are given to create the interconnecting communications and technology sharing through interacted system information of data in the world wide web of internet.

Even though the aim of development of all advance technologies is to expand our knowledge and to makes human life can proceed faster, wiser, and safer. Neither does we realize that our hard works then can have adverse effects. Such as the number or worker in the factory, in many industries, that will be cut off because of the Advance AI Technology development.

Also the effects of machinery automation thanks to the sensor technology, realtime monitoring and detections, data interactions and vast spread of information systems development in many factory machineries and the internet of things (IoT).

The other Disruptors is the advancement of robotics and humanoid that makes factories, data input, data admin, information industries, security industries, are now relied more on robots than human.

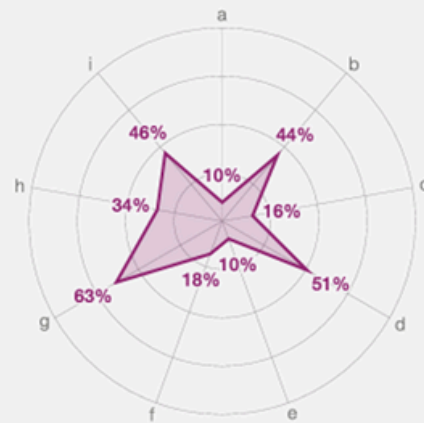
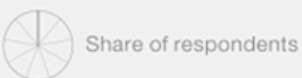
FIGURE 2.12

Risk Governance: Adverse outcomes of frontier technologies

"Which approach(es) do you expect to have the most potential for driving action on risk reduction and preparedness over the next 10 years? Select up to three for each risk."

Approach

- a. Financial instruments
- b. National and local regulations
- c. Multilateral treaties and agreements
- d. Global treaties and agreements
- e. Development assistance
- f. Corporate strategies
- g. Research & development
- h. Public awareness and education
- i. Multistakeholder engagement



Adverse outcomes of frontier technologies (quantum, biotech, geoengineering)

Risk categories

Economic

Environmental

Geopolitical

Societal

Technological

Source

World Economic Forum Global Risks

Perception Survey 2024-2025.

How Each Social Elements Interacted to Face Adverse Outcomes of Advance Technology Development

Quantum Data Processing, Bio Technology Development, Geo-Engineering, are three of the most develop field of science that are accelerated to met the end goals of healthy and advance technological frontiers.

From many technological advancement, what are the 3 most potential for driving actions on risks reduction and preparedness over the next 10 years?

The top technology are developed by creating advance research and building frontiers technology. Several of he top aim are to make sure humankind can have faster data analyzing, and more safe living environment, and to manufacture superiorly advance bio-technology to cure whatever ailments and endemic or even pandemic, if occurring.

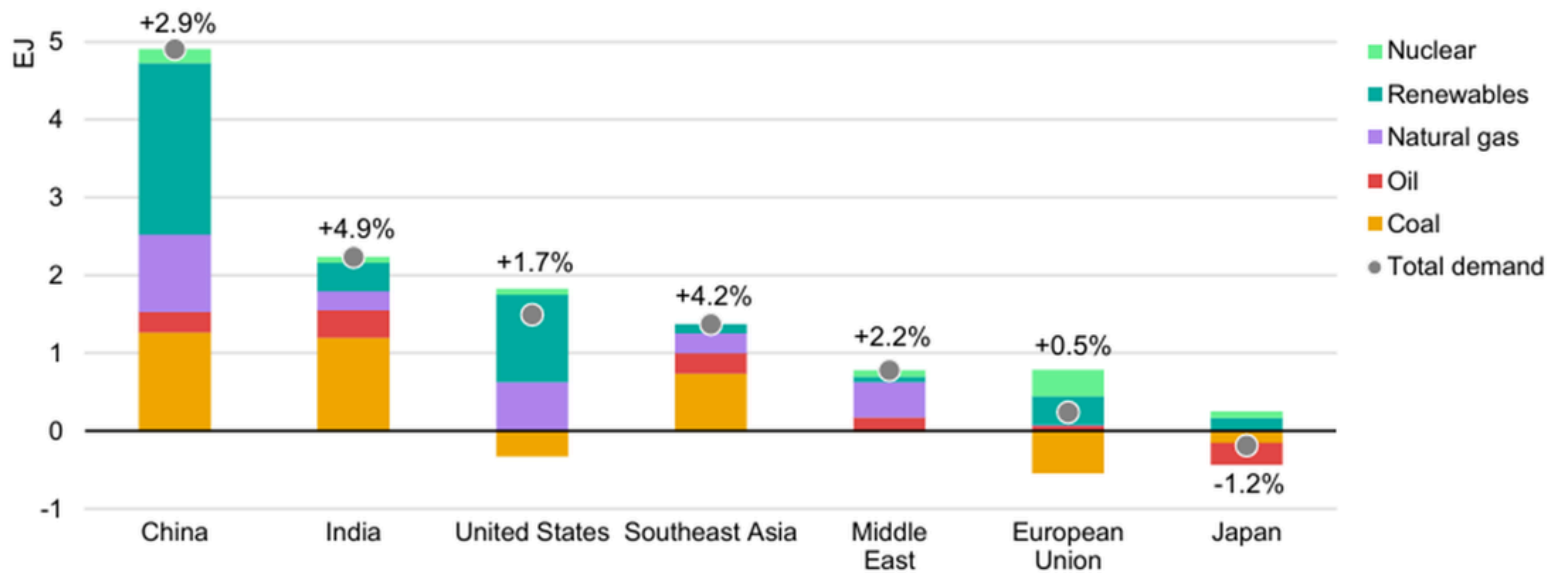
At the same time, the research and development efforts are also had increase and also developed in search of new natural resources that can be harvest or can be laboratory grown and cultivated.

Many rare metals and earth rare minerals can be found using the geo-engineering technology. To found new natural resources that can be harness further to make sure that we can choose which of the rare metals and minerals that can be uses in the future to create more advance device and smaller processor.

The aim of the development of frontiers technology is also to prevent any dangerous occurrences of several natural issues such as natural resource scarcity, the outbreak of a dangerous diseases or harmful ailments, and to create more equally informed world so any new and valuable information can be given to the world citizens in regular basis.

To create equal and healthy world citizen, as a result from the good educations, and the level of high public awareness concerning every aspects that are needed to build the great civil societies, good democrations, and healthy economy, and also equal social chances and wide spread opportunity to grow, from any where in the world.

Change in energy demand, selected regions, 2023-2024



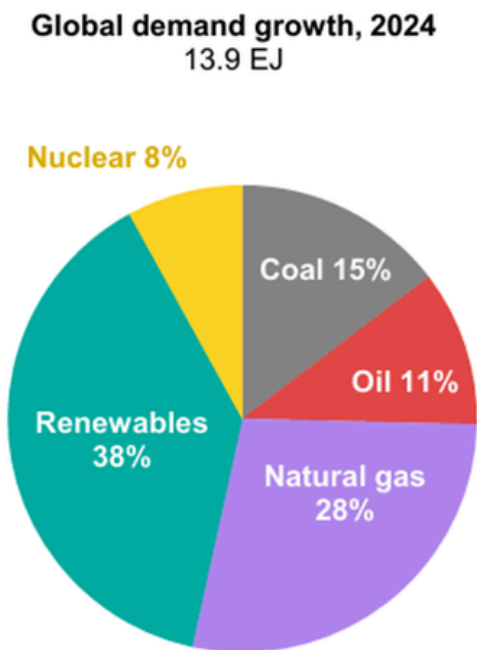
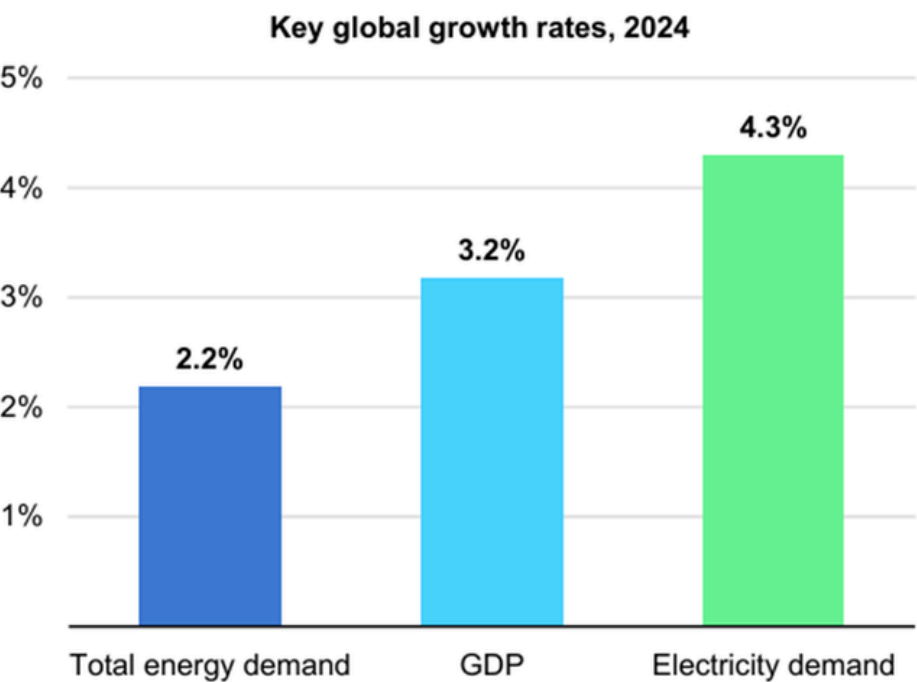
Global Energy Key Challenges

As we see on the graphics above, The China are developing very high energy demand, because of the growth in various industrial sectors. These Chinese manufacturing facilities are largely supporting the world with their innovations and effective approach at their productions, effective trend predicting manufactural demands, and many of the supporting spareparts for allover world populations in all industries, are already made first in China, US and EU before the world sees any new breakthrough and inventions.

Not only having the highest energy demand, at the page before this, we has also sees how The People of The Republic of China has also developing their renewables energy, and has fullfilled their own demand, without any dependence to other nations. So seeing the numbers should not scared us in any ways.

We also see here, where European Union, Japan, The United States are leaving their coal tanker and develop their renewable energies in fast speeds. While at the same time, the southeast asia (including Indonesia), still largely dependent on Coal for electrical energy harvesting.

Key global growth rates and the share of energy demand growth by source, 2024

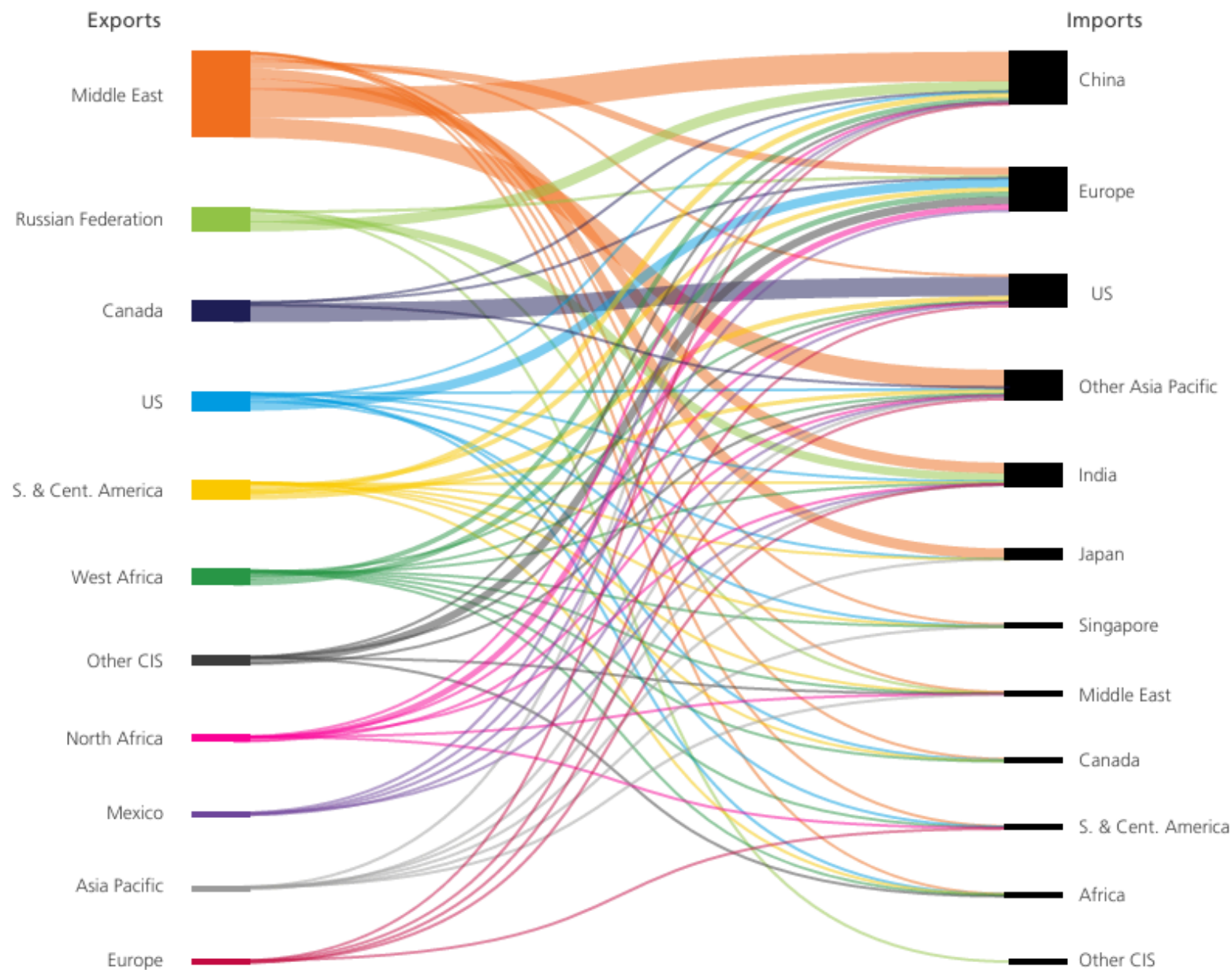


Terawatt-hours	2023								2024							
	Oil	Natural gas	Coal	Nuclear energy	Hydro-electricity	Renew-ables	Other†	Total	Oil	Natural Gas	Coal	Nuclear energy	Hydro-electric	Renew-ables	Other†	Total
Canada	6.8	102.3	23.6	88.4	360.7	58.7	0.8	641.4	7.3	109.0	25.0	85.5	343.2	66.1	0.8	636.8
Mexico	35.3	219.2	13.5	12.4	20.6	50.7	—	351.7	33.8	221.7	12.4	12.3	23.5	51.5	—	355.2
US	17.5	1942.0	738.6	815.7	241.4	733.7	10.3	4499.1	16.4	2005.2	712.4	823.1	238.7	830.0	8.9	4634.8
Total North America	59.6	2263.5	775.7	916.5	622.8	843.0	11.1	5492.2	57.5	2335.9	749.8	920.9	605.5	947.5	9.7	5626.8
Argentina	9.0	76.3	1.8	9.0	31.5	20.2	0.8	148.6	5.8	82.0	1.3	10.4	29.7	22.8	0.5	152.5
Brazil	9.1	38.6	13.3	14.5	426.0	204.2	2.4	708.1	10.6	48.8	16.2	15.8	413.2	238.0	3.1	745.7
Other S. & Cent. America	72.9	117.6	37.4	—	297.7	77.2	^	602.8	74.1	118.1	37.1	—	292.9	85.9	—	608.1
Total S. & Cent. America	91.0	232.5	52.5	23.5	755.2	301.5	3.2	1459.4	90.6	248.8	54.6	26.2	735.7	346.7	3.6	1506.3
France	1.8	31.8	0.8	338.2	55.7	82.2	7.7	518.3	1.9	18.5	0.7	380.5	70.9	79.9	8.9	561.3
Germany	4.9	76.7	124.8	7.2	19.9	255.2	22.6	511.3	5.0	78.4	106.4	—	22.2	261.8	23.5	497.3
Italy	11.1	119.0	14.4	—	40.5	76.1	3.6	264.7	13.0	109.8	13.1	—	55.2	78.1	3.2	272.4
Netherlands	1.5	46.0	10.7	4.0	0.1	56.7	2.4	121.3	1.4	44.0	10.1	3.6	0.1	62.2	1.8	123.2
Poland	2.0	16.5	100.6	—	2.4	43.4	2.4	167.4	2.1	19.3	95.2	—	2.2	48.7	2.1	169.7
Spain	9.3	64.3	4.5	56.9	25.0	118.7	7.3	285.9	9.1	51.5	3.4	54.6	34.4	125.0	7.6	285.6
Türkiye	0.5	69.5	119.8	—	64.0	76.2	1.3	331.1	0.7	65.9	122.7	—	74.9	87.3	1.3	352.9
Ukraine	0.9	8.1	22.5	52.1	12.7	7.7	—	103.9	0.6	8.1	19.6	53.0	12.8	7.1	—	101.1
United Kingdom	1.9	101.7	3.8	40.6	5.5	130.3	8.9	292.7	1.5	86.3	1.9	40.6	5.8	138.9	10.0	284.9
Other Europe	16.6	111.4	121.2	236.7	416.8	291.6	27.6	1221.7	16.8	106.8	110.4	233.9	419.6	324.6	27.2	1239.2
Total Europe	50.5	644.7	523.0	735.6	642.6	1138.1	83.8	3818.3	52.1	588.6	483.7	766.1	698.0	1213.7	85.5	3887.6
Kazakhstan	0.6	33.2	65.3	—	8.8	5.7	—	113.6	1.7	34.7	64.0	—	11.3	6.8	—	118.5
Russian Federation	9.1	533.3	204.1	217.4	200.9	8.2	5.3	1178.2	8.6	545.8	215.2	215.7	210.5	8.3	5.2	1209.3
Other CIS	5.0	157.0	8.7	14.4	43.7	2.8	0.6	232.2	4.8	153.8	9.4	18.5	47.5	7.7	0.6	242.4
Total CIS	14.7	723.6	278.1	231.8	253.4	16.7	5.8	1524.0	15.2	734.3	288.6	234.2	269.2	22.8	5.7	1570.2
Iran	28.0	322.0	0.7	6.6	22.8	1.9	—	382.0	26.6	340.0	0.7	7.3	18.9	2.2	—	395.8
Saudi Arabia	159.0	265.5	—	—	—	4.7	—	429.2	156.8	288.0	—	—	—	9.8	—	454.6
United Arab Emirates	^	118.4	—	34.4	—	14.7	—	167.5	^	121.0	—	40.6	—	15.6	—	177.3
Other Middle East	133.2	332.6	16.2	—	2.7	22.3	0.2	507.1	141.0	356.7	15.2	—	2.9	25.0	0.2	541.1
Total Middle East	320.2	1038.4	16.9	41.1	25.5	43.6	0.2	1485.9	324.4	1105.8	16.0	48.0	21.8	52.6	0.2	1568.7
Egypt	16.6	179.4	—	—	15.1	10.9	—	221.9	17.8	193.0	—	—	14.4	12.2	—	237.4
South Africa	3.6	—	188.1	8.1	2.0	18.5	4.3	224.5	1.9	—	202.3	7.8	1.1	18.2	4.6	235.8
Other Africa	43.3	216.0	40.2	—	150.1	27.7	0.5	477.9	43.7	219.2	42.3	—	154.6	30.4	0.5	490.7
Total Africa	63.5	395.4	228.3	8.1	167.1	57.1	4.8	924.3	63.4	412.2	244.6	7.8	170.1	60.7	5.1	963.9
Australia	4.9	46.7	125.6	—	15.1	80.0	0.9	273.1	5.1	49.1	127.3	—	12.8	85.9	1.3	281.6
China	9.3	297.8	5752.7	434.7	1226.0	1668.2	67.7	9456.4	9.4	320.7	5827.6	450.9	1354.3	2044.6	79.4	10086.9
India	2.5	50.8	1445.4	48.2	149.4	221.2	1.3	1919.0	2.7	56.4	1517.9	54.7	156.5	240.5	1.4	2030.2
Indonesia	6.6	61.0	216.8	—	24.6	40.6	1.1	350.6	7.1	66.1	228.4	—	26.5	45.9	1.1	375.1
Japan	30.0	320.7	302.1	77.5	74.5	148.3	53.6	1006.7	23.0	318.1	300.6	84.9	79.4	153.7	56.7	1016.4
Malaysia	2.4	69.7	93.0	—	32.4	4.7	—	202.3	2.4	73.7	98.0	—	34.4	5.0	—	213.5
South Korea	6.9	167.7	199.1	180.5	3.7	55.3	4.2	617.5	6.7	175.9	188.2	188.8	4.3	56.4	5.1	625.4
Taiwan	3.8	111.6	119.2	17.8	4.0	21.2	4.8	282.3	4.2	122.5	113.3	12.2	4.2	27.3	4.9	288.6
Thailand	0.9	129.4	30.4	—	6.6	23.2	—	190.5	0.3	136.4	33.3	—	6.4	23.2	—	199.5
Vietnam	1.3	26.4	129.8	—	80.6	38.1	0.5	276.6	0.2	21.8	152.8	—	88.7	39.6	0.4	303.6
Other Asia Pacific	37.1	229.8	172.3	22.4	177.2	44.3	0.9	683.9	30.5	234.8	188.6	22.8	185.0	49.0	0.9	711.6
Total Asia Pacific	105.5	1511.5	8586.4	781.1	1794.2	2345.2	135.0	15258.9	91.6	1575.5	8776.0	814.2	1952.6	2771.1	151.3	16132.4
Total World	704.9	6809.7	10461.0	2737.6	4260.8	4745.3	244.1	29963.2	694.7	7001.2	10613.2	2817.5	4452.9	5415.2	261.2	31255.9
of which: OECD	147.8	3504.3	1875.1	1830.6	1391.1	2293.6	152.4	11195.0	141.2	3532.2	1807.6	1881.0	1439.1	2491.3	157.4	11449.7
Non-OECD	557.1	3305.3	8585.8	907.0	2869.6	2451.7	91.7	18768.2	553.5	3469.0	8805.6	936.4	3013.9	2923.9	103.8	19806.2
European Union	44.5	456.0	333.9	619.6	328.8	892.8	65.9	2741.5	46.7	419.2	296.6	649.5	368.5	946.6	67.5	2794.6

* Based on gross output.
† Includes uncategorised generation, statistical differences and sources not specified elsewhere e.g. pumped hydro, non-renewable waste and heat from chemical sources.
^ Less than 0.05.

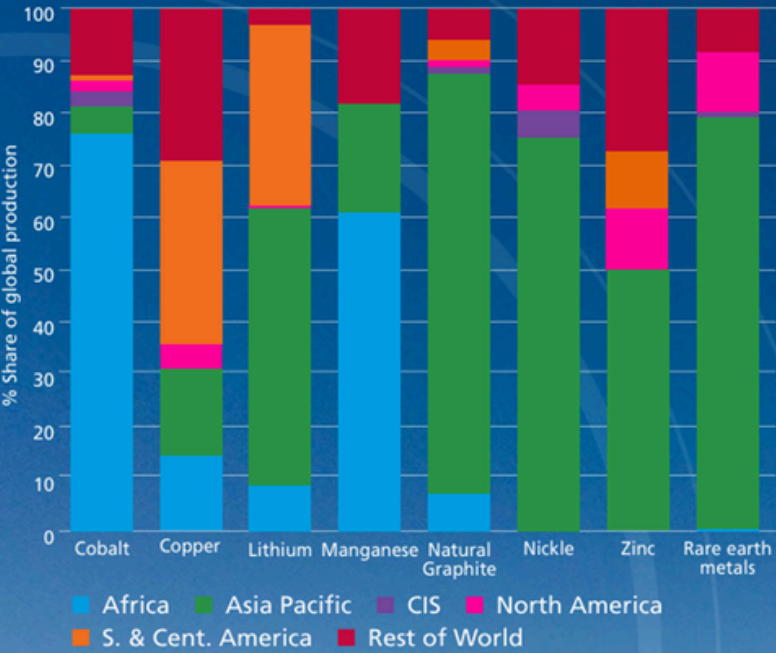
Scenario's for Global Renewable Energy Arises

From the graphic above, we can see that the biggest Global Energy usage are in China, with the number 9.456 gross output, from all sources of energy, including oil, natural gas, coal, nuclear energy, hydro electricity, and renewables. While the North America in the 2nd positions, followed by Europe, India, and Central America's, in the year 2023. While last year, America itself has reach almost half of China's Alternative Energy outcomes. With the number 4.634, while China Energy outcomes are resulting in 10.086.



Energy Demand and Global Allocations

In 2024, the Asia Pacific and Africa regions produced 57% of the key metals and materials needed by the global energy system.



On average, key mineral prices fell globally by 16% in 2024

Year	USD\$1000/te						USD\$/KWh					
	Cobalt ¹	Lithium carbonate ²	Nickel Sulphate ³	Pet Needle Coke ⁴	Natural Graphite ⁵	Copper ⁶	Zinc ⁷	Tin ⁸	Aluminium ⁹	Silicon ¹⁰	Lithium Iron Phosphate Cells ¹¹	Lithium Nickel Manganese Cobalt Oxide Cells ¹²
2000	33.42	4.47	—	—	—	1.81	56	255	5	55	—	—
2001	23.26	1.49	—	—	—	1.58	44	211	4	51	—	—
2002	15.23	1.59	—	—	—	1.56	39	195	4	53	—	—
2003	23.37	1.55	—	—	—	1.78	41	232	4	61	—	—
2004	52.76	1.72	—	—	—	2.86	52	409	7	82	—	—
2005	35.19	1.46	—	—	—	3.68	67	361	6	76	—	—
2006	37.96	2.32	—	—	—	6.73	159	419	5	79	—	—
2007	67.35	3.53	—	—	—	7.13	154	679	3	113	—	—
2008	86.00	4.44	—	—	—	6.96	89	865	4	162	—	—
2009	39.38	5.94	—	—	0.91	5.16	78	642	5	116	—	—
2010	45.97	5.19	—	—	1.08	7.54	102	954	6	140	—	—
2011	39.66	5.10	—	—	1.35	8.82	106	1216	8	158	—	—
2012	31.02	5.42	—	—	1.43	7.96	96	990	10	127	—	—
2013	27.07	5.70	—	—	0.99	7.33	96	1041	11	122	—	—
2014	30.79	5.72	—	—	0.92	6.86	107	1023	20	140	—	—
2015	28.46	6.55	—	—	0.69	5.51	96	756	13	127	—	—
2016	25.47	12.02	—	—	0.58	4.87	101	839	8	91	—	—
2017	55.79	17.04	—	—	0.65	6.17	139	937	9	117	—	—
2018	81.17	13.04	—	—	0.78	6.53	141	936	19	134	—	—
2019	35.91	10.29	17.47	—	0.67	6.01	124	868	18	106	—	—
2020	33.95	6.49	16.63	—	0.53	6.17	111	799	12	97	—	—
2021	52.93	15.17	24.42	1.02	0.56	9.32	146	1580	26	220	0.07	0.10
2022	67.06	59.43	27.11	1.38	0.76	8.83	190	1546	30	362	0.10	0.14
2023	35.44	40.30	20.39	0.89	0.65	8.49	151	1256	23	180	0.09	0.10
2024	27.24	12.39	17.57	0.70	0.48	9.14	144	1420	19	170	0.07	0.07

¹ 2000-2012 spot grade for cathodes, source US Geological Survey. 2013-2017 source London Metal Exchange. Data from 2018 onwards: min purity 99.8%, Cobalt metal EXW Europe, min. 99.8% purity, source Benchmark Mineral Intelligence.

² 2000-2008 unit value, data series 140, source US Geological Survey. Data from 2009 onwards: Lithium carbonate global weighted average, min 99% purity, source Benchmark Mineral Intelligence.

³ Nickel sulphate CIF Asia, min 22% (100% Nickel contained basis), source Benchmark Mineral Intelligence.

⁴ Pre-calcined pet needle coke DDP China, sulphur <0.5%, source Benchmark Mineral Intelligence.

⁵ Flake graphite FOB China, -194 mesh, source Benchmark Mineral Intelligence.

⁶ Copper, grade A cathode, LME spot price, CIF European ports, source International Monetary Fund (IMF).

⁷ SHG delivered US Midwest Mavg, source S&P Global Commodity Insights, ©2025 by S&P Global Inc.

⁸ In warehouse US MAvg, source S&P Global Commodity Insights, ©2025 by S&P Global Inc.

⁹ P1020 Transaction Premium delivered US Midwest Mavg, source S&P Global Commodity Insights, ©2025 by S&P Global Inc.

¹⁰ 553 grade delivered US Midwest MAvg, source S&P Global Commodity Insights, ©2025 by S&P Global Inc.

¹¹ Global weighted LFP cell, source Benchmark Mineral Intelligence.

¹² Global weighted NCM cell, source Benchmark Mineral Intelligence.

Preparing Core Materials Usage Switch

ONE

FRICTION OVER SPEED: IS THE TRANSITION FAST ENOUGH – OR TOO FAST FOR STABILITY?

Despite growing ambition in many scenarios, implementation timelines are uneven, especially across developing regions. The speed of change is colliding with system inertia, equity concerns, and political volatility.

Insight Activation

Are your expectations of scale-up pace grounded in delivery capability – not just technology potential?

THREE

THE RISE OF MULTIPOLAR AND MULTI-SPEED ADDITIONS AND TRANSITIONS PATHWAYS

Fragmentation is a consistent theme. Instead of a single global trajectory, we are entering a world of multiple, sometimes incompatible, transition pathways shaped by regional priorities, values, and capabilities.

Insight Activation

How does your strategy adapt to a future where alignment is partial and plural, not global and unified?

TWO

DEMAND IS NO LONGER PASSIVE

Most scenario sets treat demand as a derivative of economic growth. But real-world shifts in consumer behaviour, affordability, AI, and distributed solutions are disrupting traditional patterns.

Insight Activation

What assumptions about energy demand are at highest risk of being wrong in your country or sector?

FOUR

AI, DATA, AND DIGITAL INFRASTRUCTURE AS EMERGING ENERGY ACTORS

Only a few scenarios explore the energy implications of AI, digitalisation, and data centres. Yet their impact on demand growth, grid design, and resilience is already unfolding.

Insight Activation

Are energy models in your organisation treating AI as a marginal force – or a structural gamechanger?

W FIVE

CLEAN TECH DEPENDENCIES ARE THE NEW ENERGY SECURITY FRONTIER

While fossil fuel geopolitics is well-covered, many scenarios underplay new dependencies – minerals, supply chains, IP control – that could derail clean tech rollout or create new vulnerabilities.

Insight Activation

Are you actively stress-testing your strategy for green supply chain risks and chokepoints?

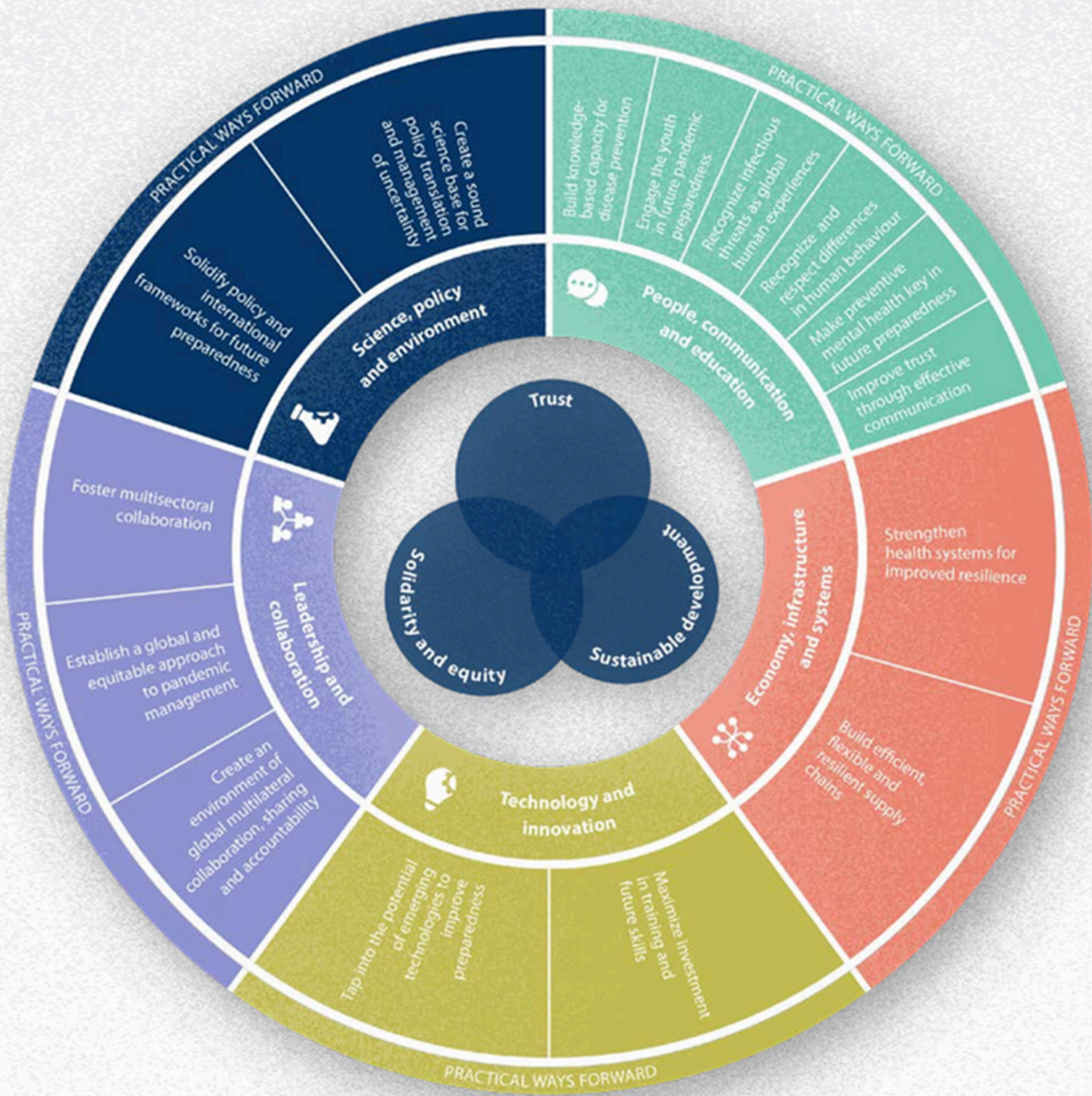
SIX

LEADERSHIP LEGITIMACY WILL SHAPE ENERGY TRANSFORMATION OUTCOMES

Whole systems changes depend not just on policy but on trust, inclusion, and institutional legitimacy. Few scenarios consider how contested narratives, social divides, or governance gaps may delay, disrupt and derail pathways.

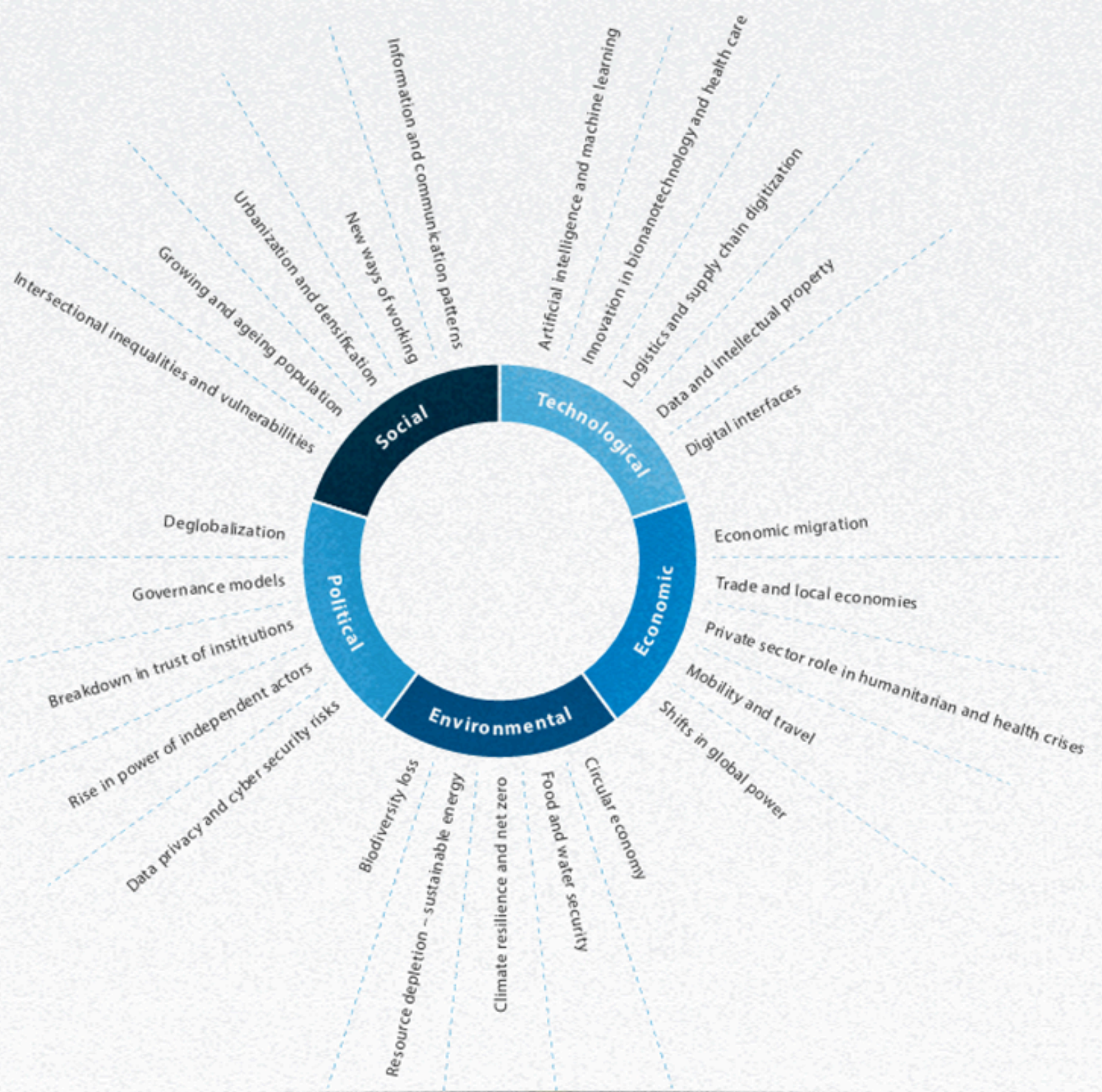
Insight Activation

What mechanisms are in place to ensure your transition plans are perceived as fair, inclusive, and future-fit?



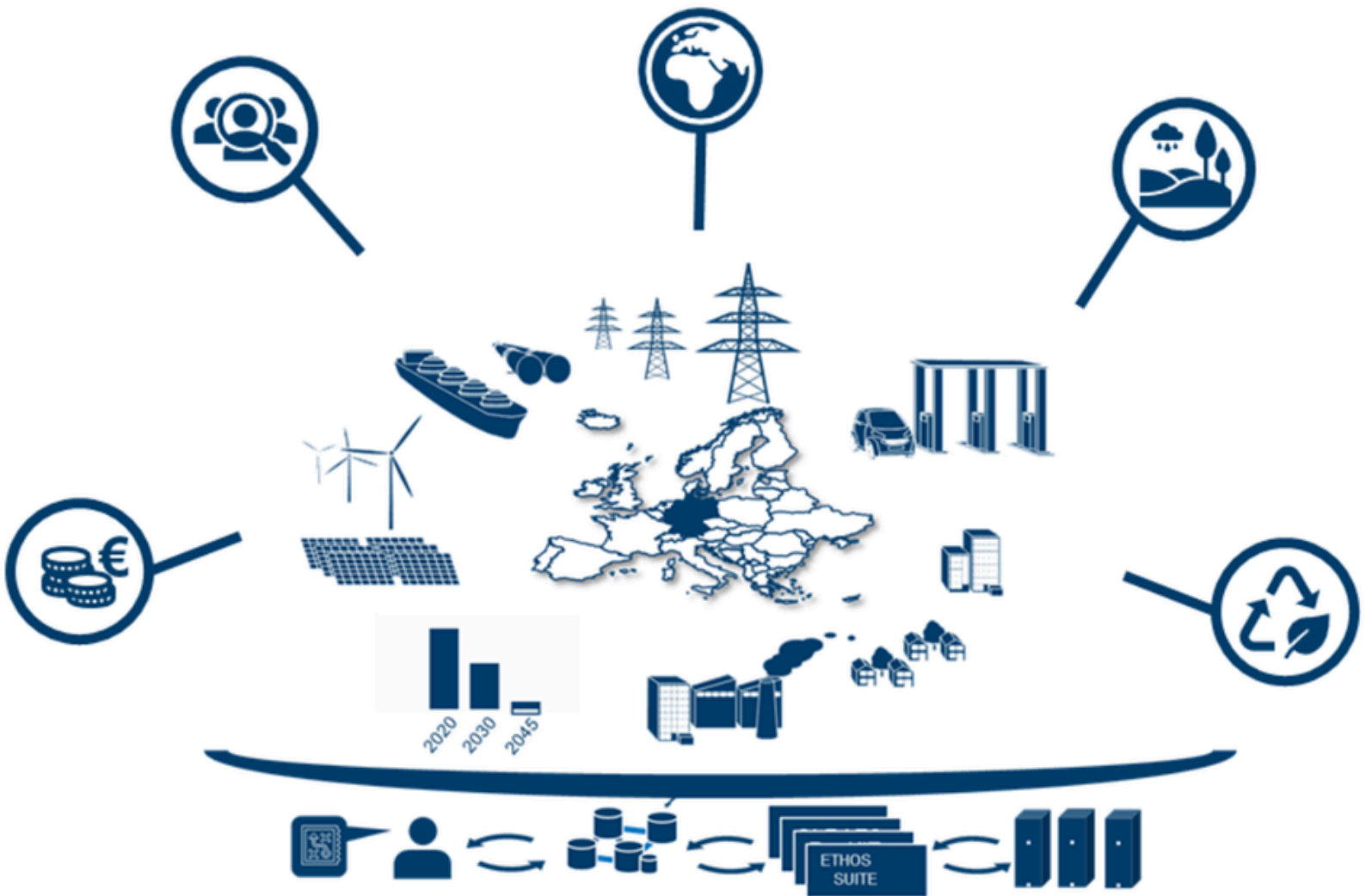
Guiding Principles for Future Pandemic Preparedness





Guiding Principles for Future Preparedness





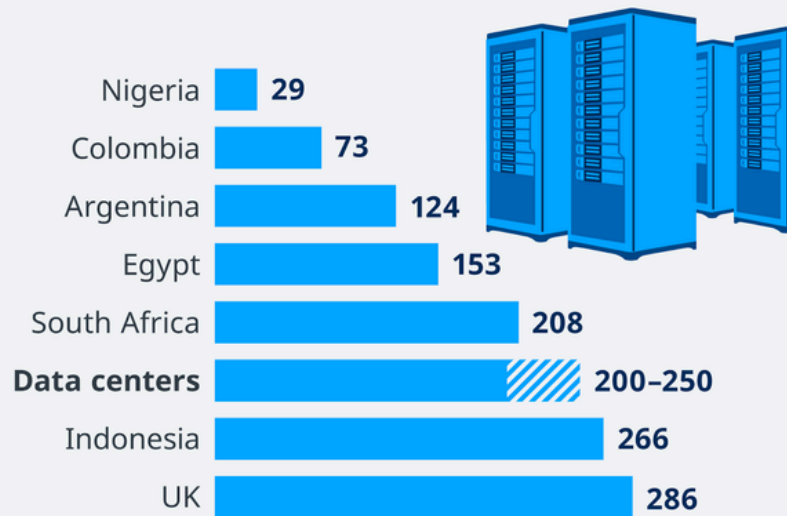
TRANSFORMATION STRATEGIES FOR A SUSTAINABLE FUTURE

Energy Transformation for Sustainable Future



Data centers use more electricity than entire countries

Domestic electricity consumption of selected countries vs. data centers in 2020 in TWh



Source: Enerdata, IEA

How About Internet Diets?

When we speak about green energy, have we thought again about our habit towards Internet? It's a 24/7 link, never dis-engage for many of us, from waking us at the morning, and accompany us until bed time.

At the last editions of Dreamarks, we have presented how a simple Love at TikTok or Instagram, needs vast arrays of areas, that is filled with not only full of large data machine, but also several thousands of people working at the same time, around the globe. That simple Love must reach the intended content at the reachable areas of several Acres of Big Data Server, that interconnectively active in several countries across the globe. Somebody must taken the bitter pills, and in this case, it's all of us.

7 billions of earth inhabitants, is a great achievement. In our probable future, there can be fail at global government that can makes global epidemic happens. But, we have conquer Covids, and along the ways, we're preparing the world and all global citizens towards anything close to it. We have solve the Pandemic problems by using vast internet networking, and by using AI projections machines. But lets makes this not as habits, but as the other way out from a problems. Otherwise, we can make our mind dulls because of the dependency to AI. And lets not use AI for problem solving. Lets stay to the wiseness of human discussion, to sharpen our ways of thinking, of learning, of producing new ideas, and of problem solving.

Because the high electricity needed for giving internet services, in order to prolongth the healthy oxygen supply in the Planet Earth, we must do many kinds of diets. Maybe in the near future, we can reduce our Internet time to only be 3 hours a day, and this for anyone, from a kids using roblox, to a workers using AI at the office.



**Complexity of AI in health
detering policy-makers
and business leaders**

- Lack of understanding of AI's value in health
- Complexities in securing AI financing
- Fragmented coordination of AI implementation in health



**Misalignment of technical
choices with strategic visions**

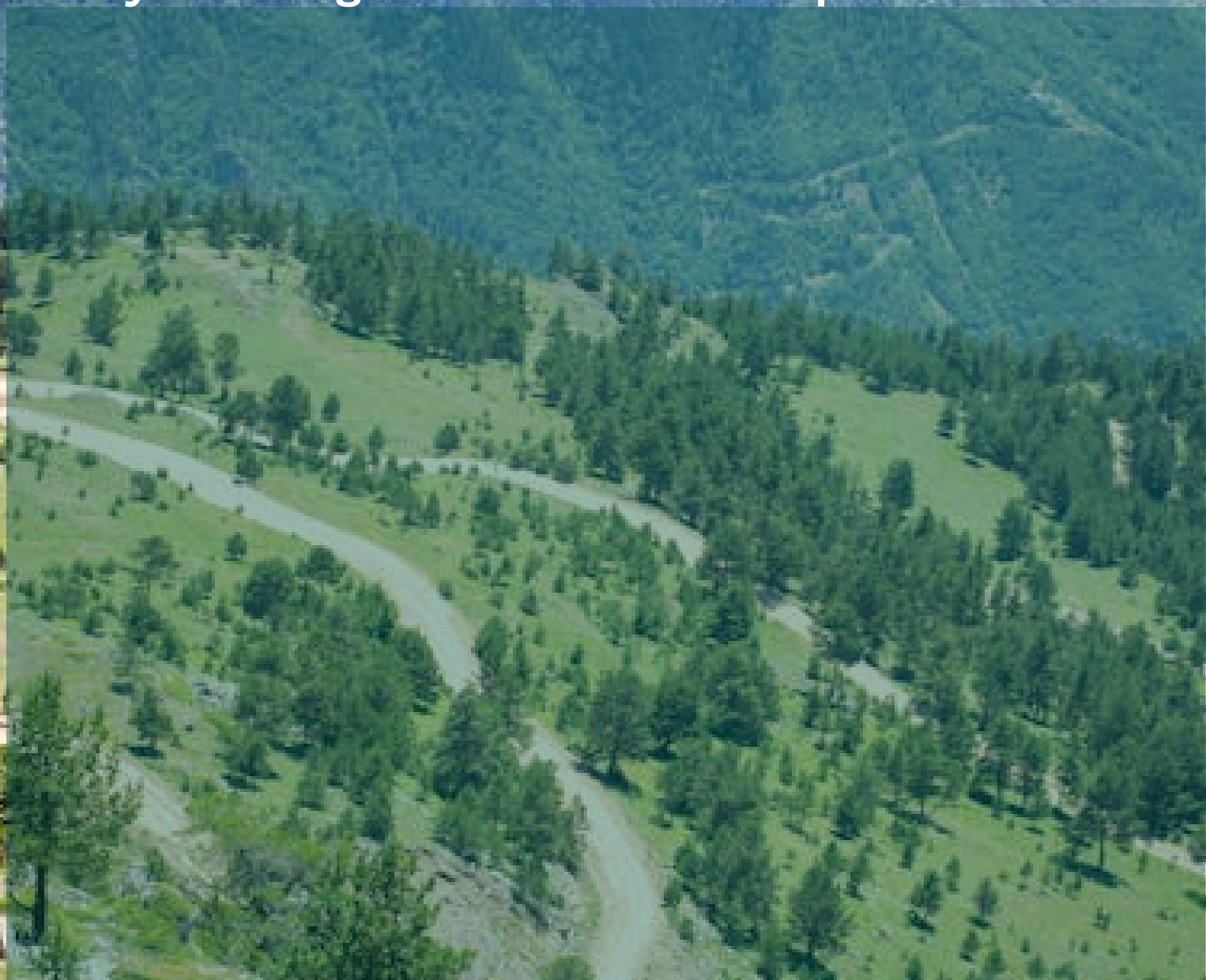
- Inequitable access to AI health solutions due to inadequate DPIs
- Limited digital literacy efforts for leaders and decision-makers



**Low confidence in AI
within a fragmented regulatory
and governance framework**

- Fragmented, outdated regulations that hinder AI innovation
- Difficulty of building trust within a complex ecosystem

Key Challenges of AI in Health Implementations



Paradigm shift to well-being

Shift from a curative to a wellness-focused healthcare system



8 billion doctors

Every individual has access to a personalized AI doctor via their personal devices



4 key visions

bringing transformative changes driven by AI



AI-powered operational excellence

AI-enabled healthcare processes and administrative tasks



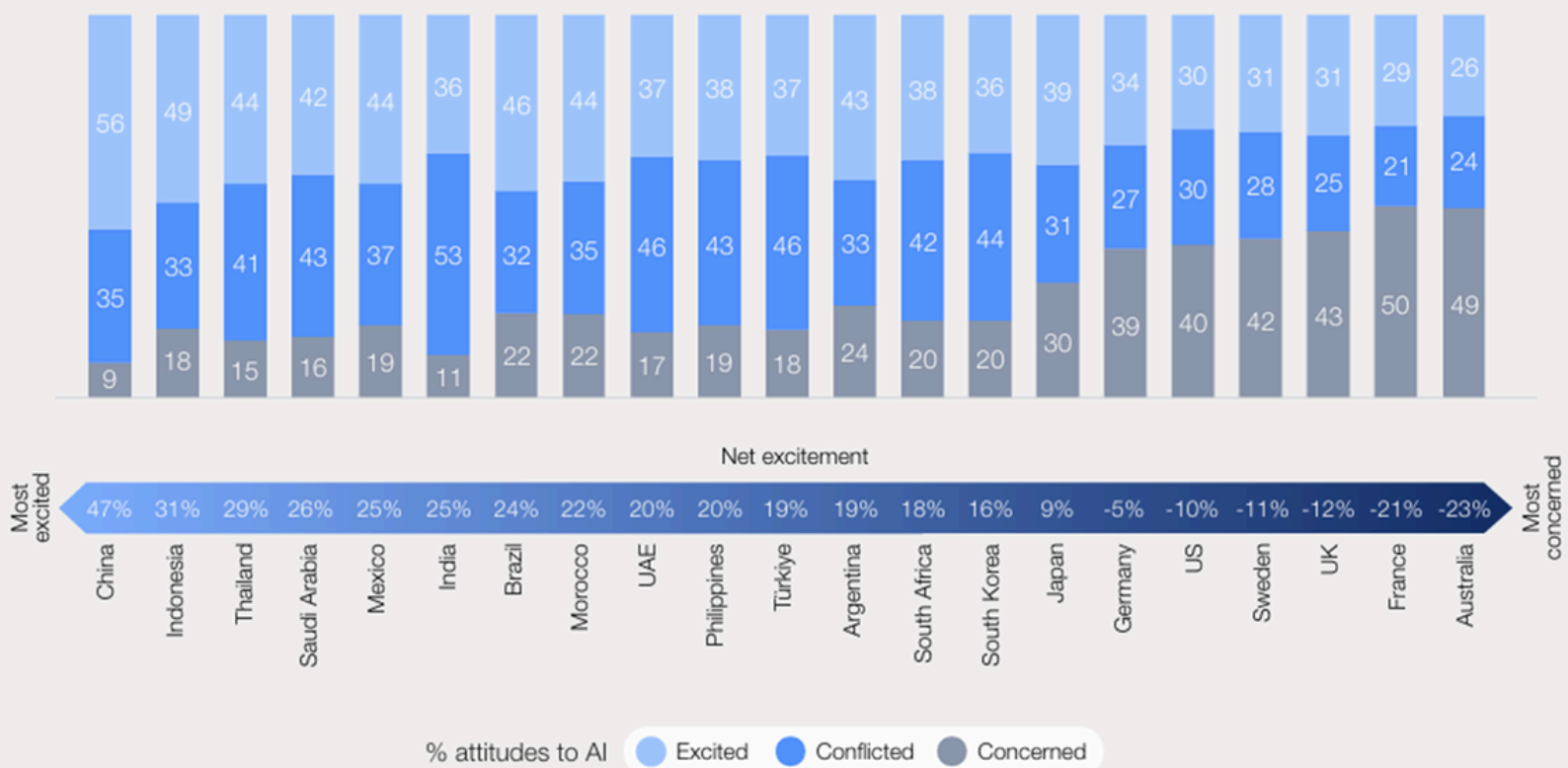
Health leapfrog

LMICs bypassing traditional healthcare development stages by adopting AI

4 Key Visions for AI in Health Implementations



FIGURE 7 | Contrasting consumer sentiments challenging AI adoption in global markets

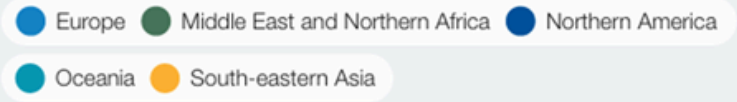


The Future of AI enabled Productivity & Economy



Figure 4.1 Top 10 economies by use of AI among local businesses to enhance productivity

1	Norway
2	USA
3	Finland
4	Indonesia
5	Israel
6	Philippines
7	United Arab Emirates
8	Australia
9	Switzerland
10	New Zealand

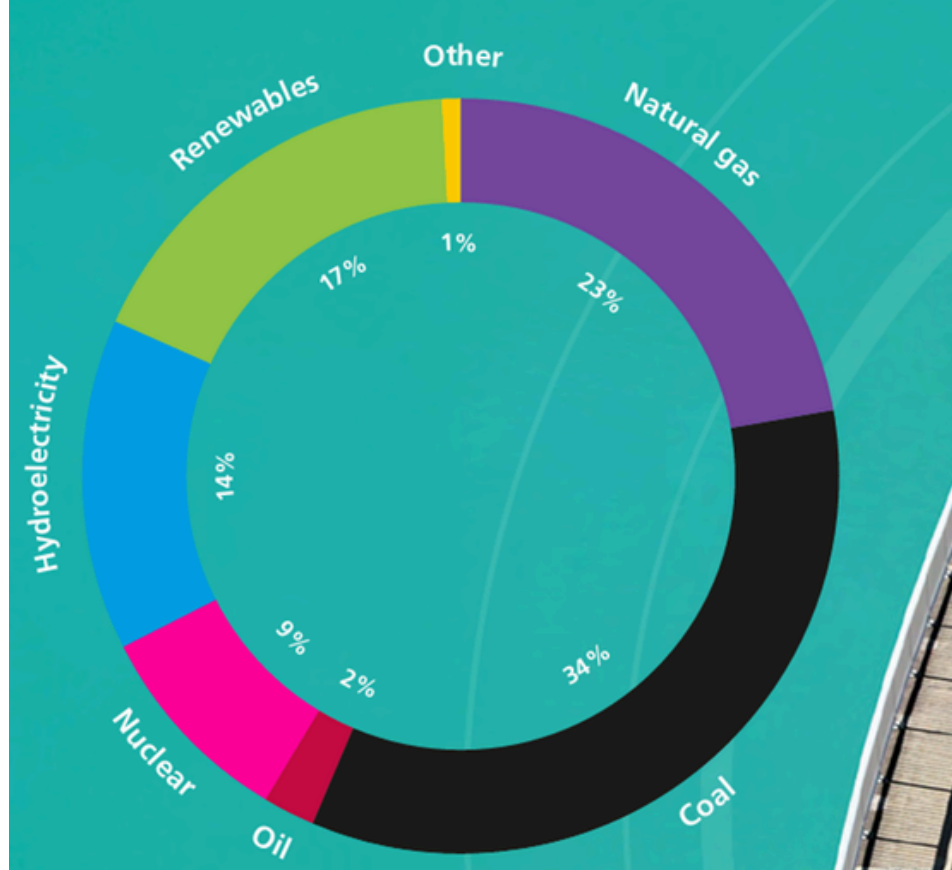


Source: World Economic Forum. Executive Opinion Survey 2024.

Figure 4.2 Top 10 sectors to generate AI opportunities

1	Information and technology services
2	Financial services and captial markets
3	Energy technology and utilities
4	Telecommunications
5	Accommodation, food and leisure services
6	Advanced manufacturing
7	Education and training
8	Media and publishing
9	Engineering and construction
10	Medical and healthcare services

Generation from low and zero-carbon sources surpassed 40% of total electricity generated in 2024



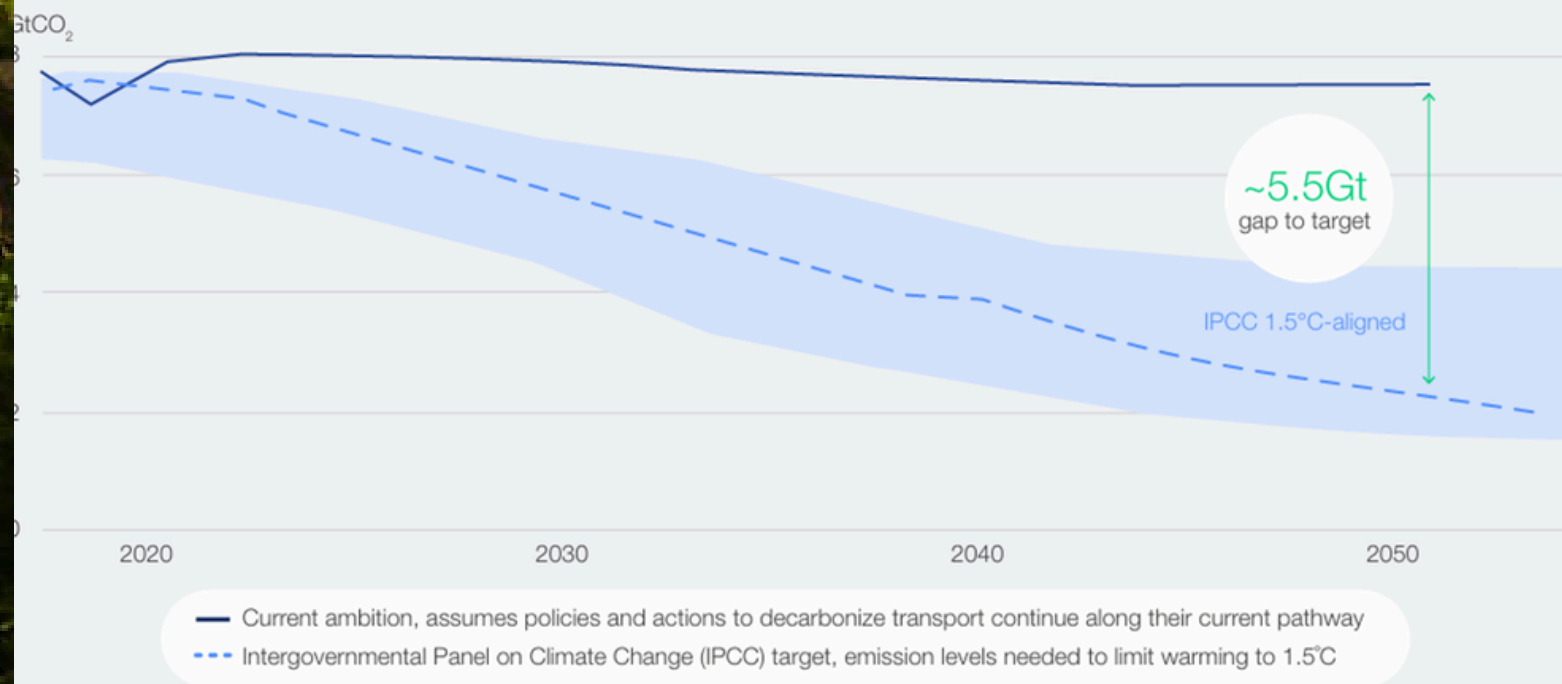
Humanizing Energy



FIGURE 1 Carbon dioxide emissions for the transportation sector (Gt)

CO₂ emissions (Gt) for the transportation sector

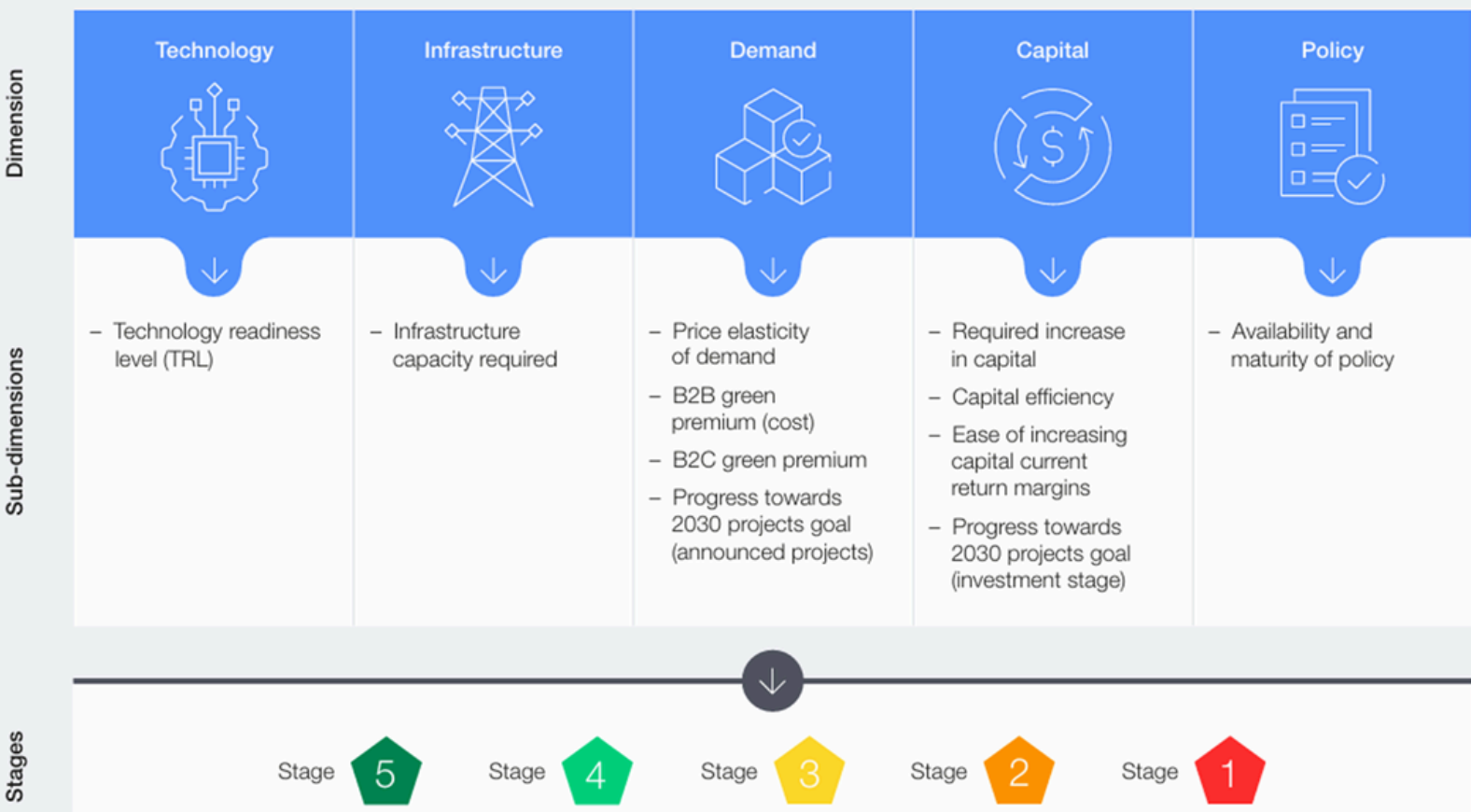
To get on track towards net-zero CO₂ emissions by 2050, emissions from the transportation sector need to fall by more than 3% per year. Half of the industry's emissions can be linked to the freight segment.



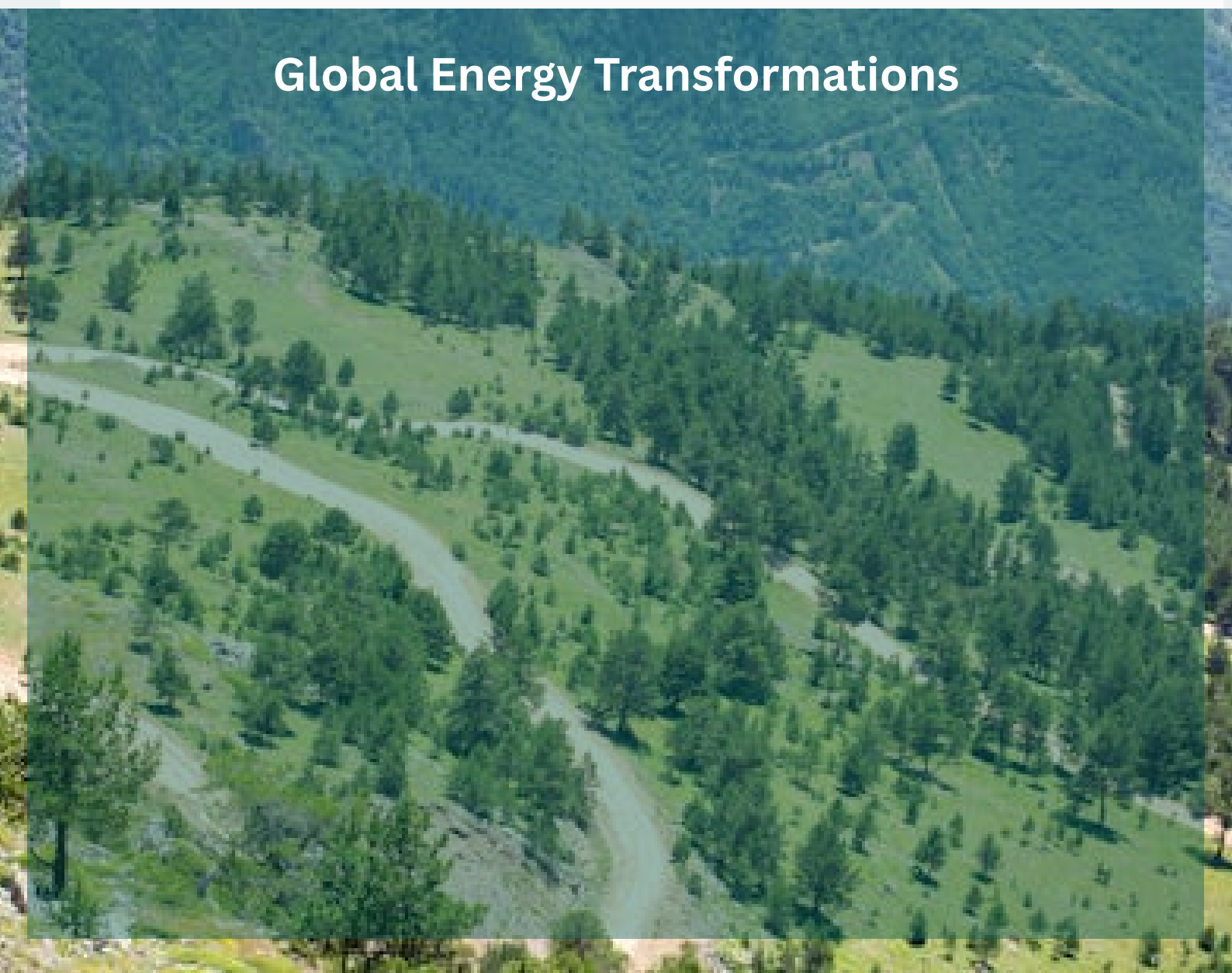
Source: International Transport Forum.³

Rethinking CO₂ Emissions Risks

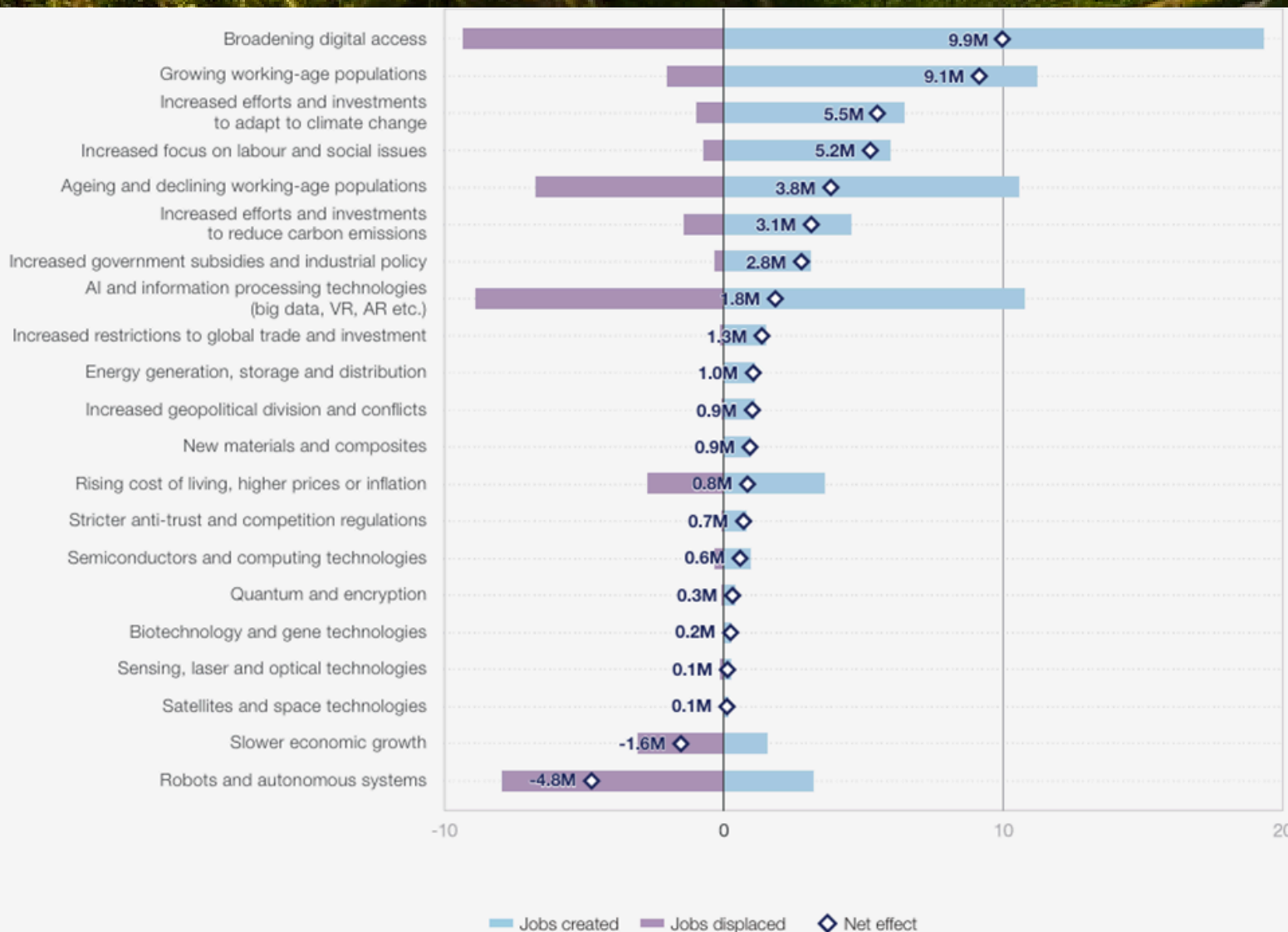
FIGURE 4 | Scoring matrix for transformation dimensions



Global Energy Transformations



Expected impact of macrotrends and technology trends on jobs, 2025-2030



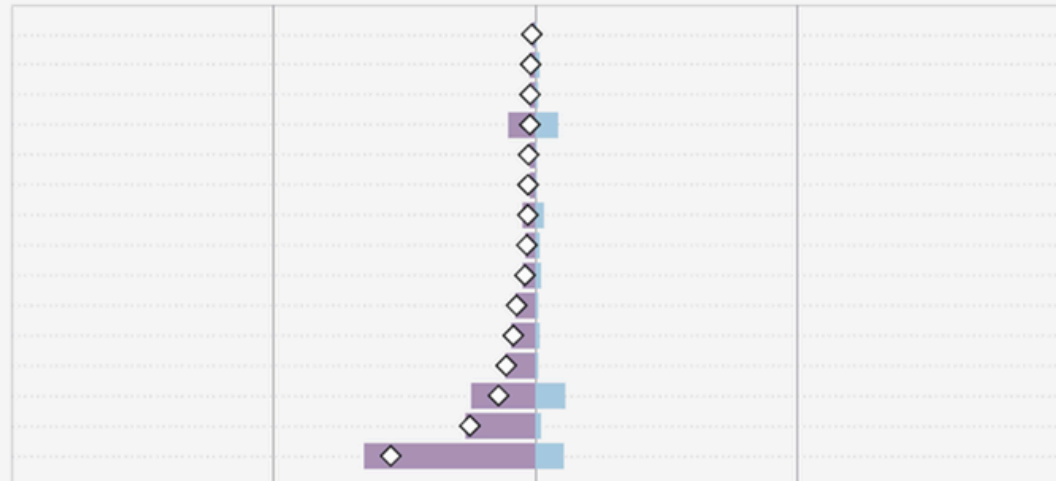
Source

World Economic Forum, Future of Jobs Survey 2024;

Expected impact of macrotrends and technology trends on jobs, 2025-2030

15 largest declining jobs

Claims Adjusters, Examiners, and Investigators
Business Services and Administration Managers
Graphic Designers
Client Information and Customer Service Workers
Data Entry Clerks
Bank Tellers and Related Clerks
Security Guards
Transportation Attendants and Conductors
Accountants and Auditors
Accounting, Bookkeeping and Payroll Clerks
Printing and Related Trades Workers
Material-Recording and Stock-Keeping Clerks
Building Caretakers, Cleaners and Housekeepers
Administrative Assistants and Executive Secretaries
Cashiers and Ticket Clerks



15 largest growing jobs

Farmworkers, Labourers, and Other Agricultural Workers
Light Truck or Delivery Services Drivers
Software and Applications Developers
Building Framers, Finishers, and Related Trades Workers
Shop Salespersons
Food Processing and Related Trades Workers
Car, Van and Motorcycle Drivers
Nursing Professionals
Food and Beverage Serving Workers
General and Operations Managers
Social Work and Counselling Professionals
Project Managers
University and Higher Education Teachers
Secondary Education Teachers
Personal Care Aides

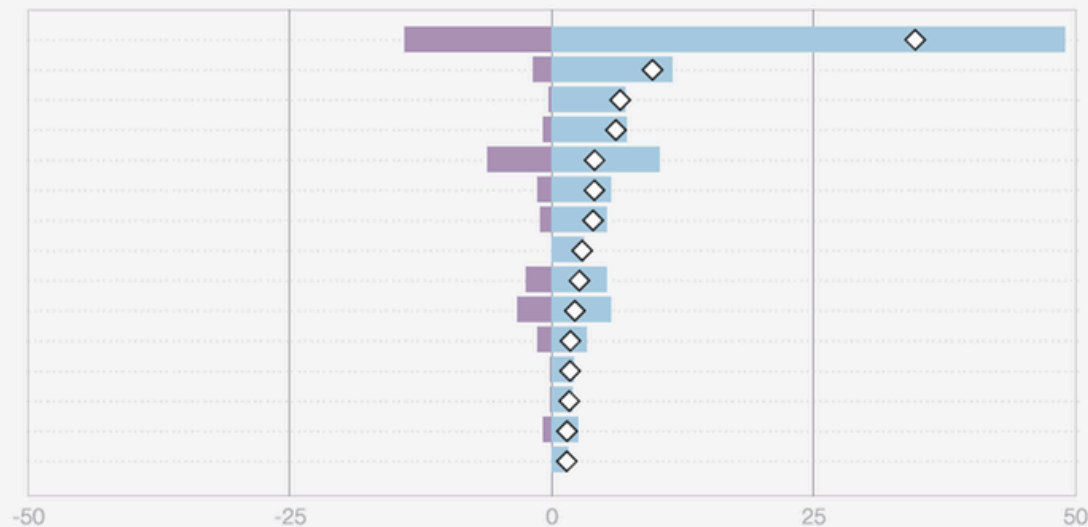
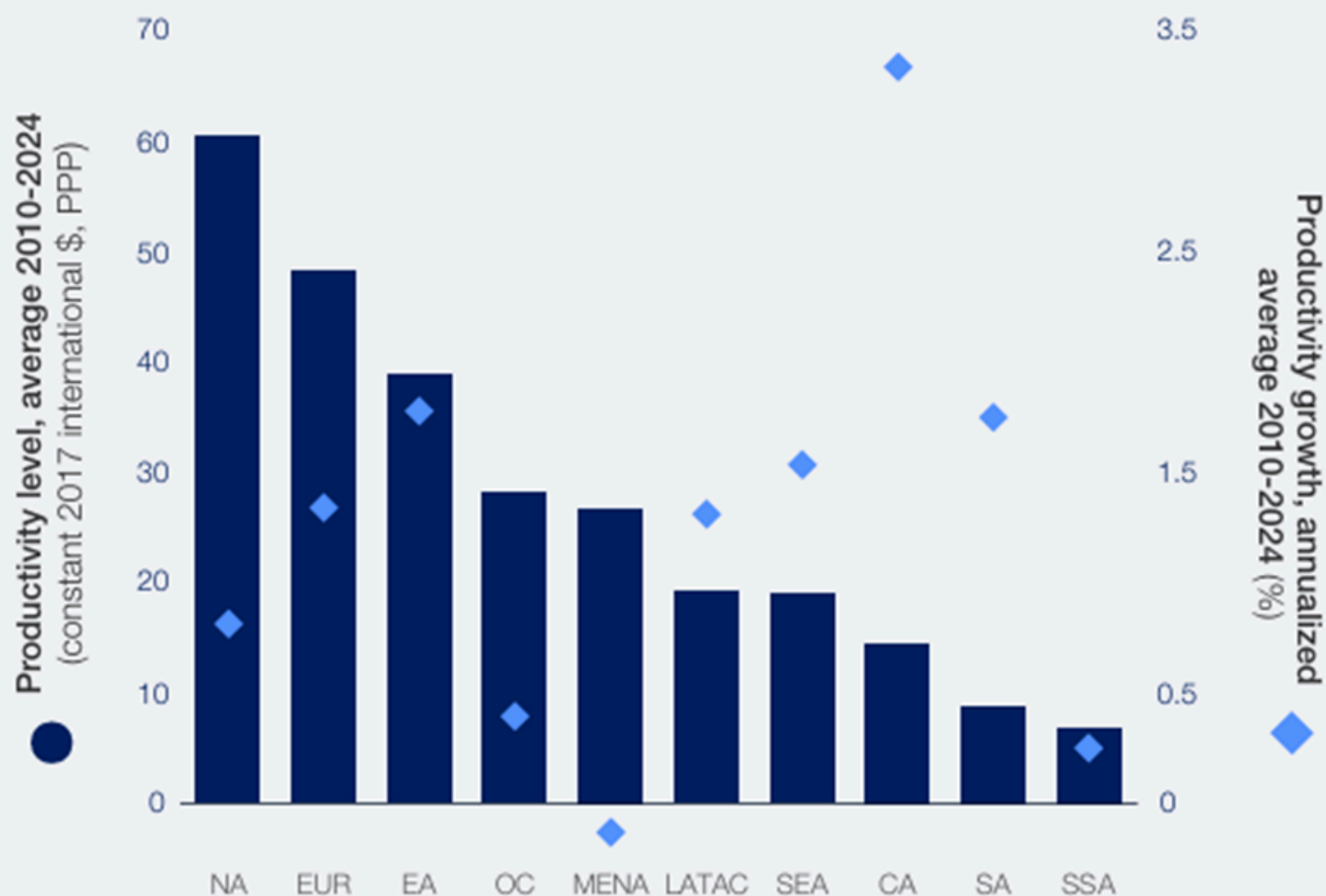


Figure 2.1 Labour productivity 2010-2024
(level and growth), by region



Note: NA = Northern America, EUR = Europe, EA = Eastern Asia, OC = Oceania, MENA = Middle East and Northern Africa, LATAC = Latin America and the Caribbean, SEA = South-eastern Asia, CA = Central Asia, SA = Southern Asia, SSA = Sub-Saharan Africa.

Source: World Economic Forum and Accenture based on International Labour Organization (ILO) modelled estimates, output per hour worked (GDP, constant 2017 international \$, purchasing power parity).

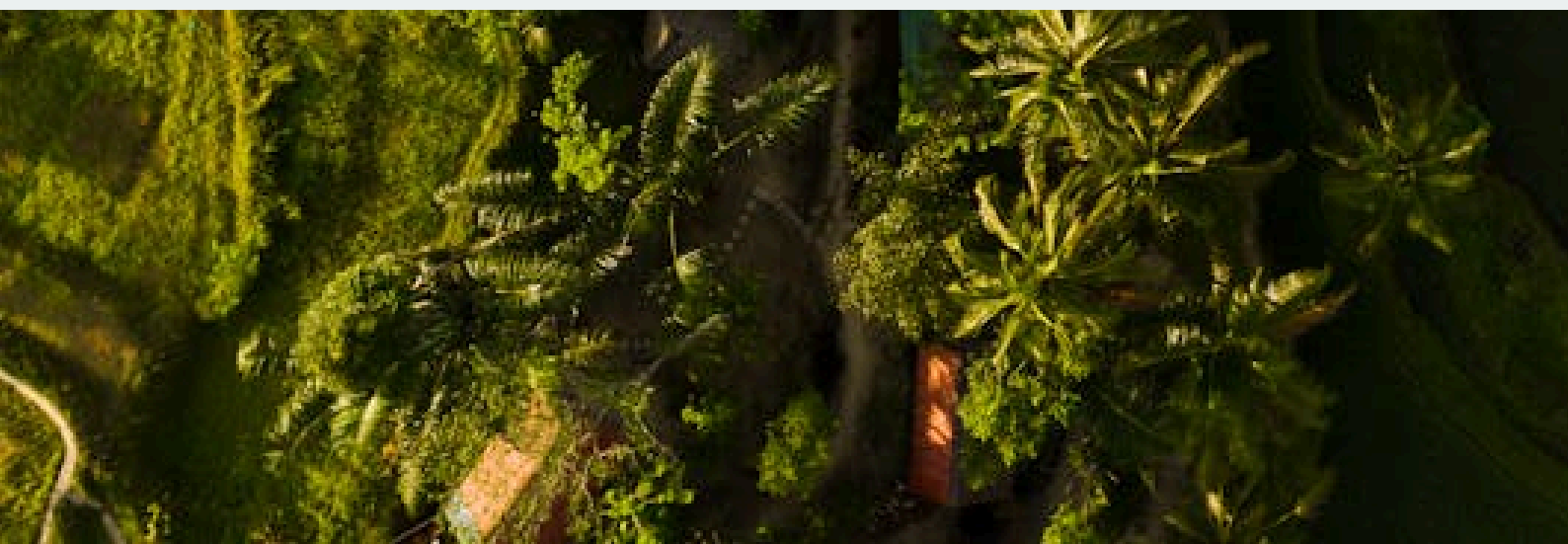


Figure 2.2 Sectoral contribution to productivity growth between 2003-2008 and 2013-2017



Note: "Other industry" includes mining, utilities and construction; "Other services" includes government and personal services. All medians.

Source: World Bank, 2020.

Future of Human Productivity 2030